THE NEW ENGLAND FARMER

DEVOTED TO AGRICULTURE, HORTICULTURE, AND KINDRED ARTS.

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SPECIALTIES OF JULY.

Now let me tread the meadow paths
While glittering dew the ground illumes,
As, sprinkled o'er the withering swaths,
Their moisture shrinks in sweet perfumes;
And hear the beetle sound his horn;
And hear the skylark whistling nigh,
Sprung from his bed of tufted corn,
A hailing minstrel in the sky.—*John Clare.*

JUST as we heralded in the month of June, and declared we had never seen such beauties in Nature, nor had ever realized such charming sensations before, do we now welcome JULY,—July! the month of the early harvests, when golden grains and yellow fruits begin to drop into the lap of the husbandman, to fulfil the promises of May and June.

The world around us now assumes a character—a July character—so unlike any of its fellows that it scarcely seems to belong to the same family. Not only are the sights, the external aspects of nature, greatly changed, but the *sounds*, also, are peculiar to the season. Kine cease to low, the meadow lark whistles from the topmost bough of the old apple tree, or some tuft of tall grass near his brooding mate; the martins and swallows skim the air, snatch up unwary insects who are on the wing, and convey them to their clamorous young who receive them with open mouths and thankful tones. Now "the beetle sounds his horn," and the brooding bittern "booms" to her mate as he soars in circles a thousand feet above, as a signal to her locality among the rushes of the swamp.

Now rains are less frequent, the dust flies; the plants wither, when we "have one of those days which make the house too hot to hold us, and force us to seek shelter in the open air, which is hotter; when the interior of the blacksmith's shop looks awful; when the birds sit open-mouthed upon the trees; when pedestrians along dusty roads quarrel with their coats, and women go about their work gownless, and the weeping-willow dips its green fingers into the clear cool water."

Such are mild and lovely aspects of nature. That they generally rule the year in our climate, forms one of our greatest blessings. We are fortunately exempt from those sudden and terrible manifestations of God's power in the earthquake, the tornado, the sirocco of Italy, or the awful simoom of Arabia and Syria.

Here, we are blest with gradual changes of the seasons, instead of searching droughts and drenching rains, as described by Mr. D. Warren, in his work on British India. "A suffocating calm," he says, "which prevails particularly about the end of the great heats, precedes the setting in of the southern monsoon. With the end of May come on the first storms, which are brief, but of extreme violence. Thunder is heard in the distance at intervals; the sun sets in a bed of clouds, and every evening, the lightnings illuminate all points of the horizon. The rain falls for half an hour, in torrents; after a few days it lasts longer, and towards the middle of June it rules the entire day, for when it is not actually raining, the sky is at least covered with a dense and tereatening curtain of clouds. It rains sometimes, particularly in July, for thirty or forty hours consecutively, and then not in fine lines, broken and almost imperceptible, as in our climates, but in straight parallel streaks, and frequently like a sheet of water coming down all at once with the fury and impetuosity of a cascade.

"The miserable clay huts of the natives become thoroughly soaked under this continued avalanche; their roofs fall in and bury them, or, at all events, escaping that easier fate, they find themselves exposed to all the rigors of the open air, and perish in great numbers. This is the period of wide-spread distress, which does not spare even the nabob and the conqueror; and the very reptiles, those of the most hateful species, like the rest, inundated in their holes, dart to the surface of the soil and seek an asylum among the dwellings of men. Numerous varieties of snakes, centipedes, and scorpions climb your stairs, invade your houses, and glide into every room. It is impossible to take a step in one's bed-chamber at night, without a light, unless one is prepared to run the risk of a sting that may prove fatal. The utmost distrust must be felt of every thing that one touches; a cruel bite may kill you from the inside of a boot or a sleeve. For some time you lead a life of continual alarm and disgusting contacts."

There are other parts of the globe's surface where rain is almost unknown. This is the case on the coast of Peru, and in a large part of Australia, where the trees are obliged to arrange their leaves in the same line as the rays of the sun, since, if they were in the natural position, they would be too quickly dried up. The Desert of Sahara, is denied rain entirely, and from the immense plains of Africa there rises only a column of burning air, while not a drop of dew falls to moisten the parched surface or to develop vegetation.

Lacking all experience in these terrible operations in nature, we can have no adequate conception of the inconveniences, fears and even destruction of life and property, which they cause. Let us contrast them with our more equable changes of heat and cold, of dryness and moisture,—with our matchless July mornings and sunset hours.

> "When day her farewell beam delays,
> Amid the opening clouds of even,
> And we can almost think we gaze
> Thro' opening vistas into heaven,"—

let us indulge more frequently in these contrasts, and we shall complain less of July droughts or July drenchings than we have heretofore.

Upon the whole, our New England climate is more favorable to health and longevity, to the enjoyment of all the comforts of this life, and for preparation for another and better life, than any we have read of or experienced. Its changes are sometimes sudden and severe, but of a temporary character, and we are able to protect ourselves against them by our industry and skill.

TRAINING THE TOMATO.

In visiting the grounds of the late Mr. Tudor at Nahant, several years ago, we noticed that he was cultivating a good many tomatoes, and was experimenting in order to learn the best modes of doing so.

The plan which he found the easiest and best, upon the whole, was, to plant the seed in drills and place a rail each side of the plants upon stakes standing something in the shape of the letter V,—that is, slanting out at the top. Care was taken not to have the plants stand so thick as to interfere with each other, and to tie the leading stems to the rails as they grew long enough. In this way the vines would rest upon and hang over the rails, and keep them up in the sun and air, as well as keeping the fruit from the ground. The vines looked as though they would well pay for the labor bestowed upon them. In addition, some persons pinch off the top of the

vine as soon as it has fruited, one joint above the fruit, leaving the leaf entire. Then allow the main shoot to go on again until it has blossomed and set another bunch of fruit, then pinch out as before. All the laterals which grow on the main branches down to the axils of the leaves, are cut out as often as they are produced, but leaving the leaves entire. A person who has practiced this mode says, "it is astonishing what immense clusters of fine, large tomatoes may be produced in this way." When planted in a favorable situation, they will ripen at least as early as those grown in any other way out of doors, and frequently three days or a week earlier.

Another mode is to nail bits of lath across from stakes in a square form, and drive the ends of the stakes into the ground immediately over the hill of plants. The stakes may be four, five or six feet long, in a rich soil, the vines will reach the top of the longest. We have raised them in this way in great abundance, and perfection. If the vines lie upon hay, straw, or brush wood, the fruit will ripen better and be kept cleaner, than if lying upon the ground.

THE CURCULIO.

On another page we publish an interesting communication from a gentleman in the fruit region of Michigan. From an article written by the Secretary of the St. Joseph Horticultural Society and published in the St. Joseph *Herald*, it appears that the enterprising and industrious fruit raisers spoken of by our correspondent, have discovered a new process of destroying the curculio, which greatly encourages the hope that at last the means of a successful warfare with this enemy of the fruit growers have been developed. The following description of the process, devised by Mr. William B. Ransom, and now practiced by him and his neighbors, is given:—

Put the orchard in the best order; level down the soil about the root of every tree, and smooth a circle for a diameter of two and a half feet from the tree as a center. Have the ground very clean around the base of the tree. Do not leave a single hole next the tree. Leave no place where the curculio can hide except under the shelter you provide. Now lay close to the tree, and close to the ground, about four pieces to a tree, either chip, or bark, or board, or lath, or rag, or corn-cob, or old leather, or anything for a covert.

The curculios will conceal themselves under this shelter and may be destroyed by the thousands. Go around every day, turn over each chip and kill every curculio. They will generally adhere to the chip, but may often be found on the ground under the chip.

Mr. Ransom has closely studied the habits of this destructive insect for fourteen years, and has arrived at the following conclusions:—In the Fall the curculio seeks a warm and safe shelter to hibernate. This is either the ground, or leaves, stumps, logs, old fences, woods, and other congenial places of concealment. The first warm day in spring that starts vegetable life calls the curculio forth and it proceeds to its feeding and breeding ground. Last year when bugging he discovered that all the curculios dropped within two or three feet of the roots of the tree, and on examination found the little Turk sheltered on the trunk and in holes near the base and under side of the principal limbs.

Hence the idea of the above described traps was suggested to his mind.

Many instances of the rapidity with which curculios have been destroyed by this process are given. Mr. Ransom, in four hours, destroyed 2109, by actual count; Hon. John Whittlesey killed 2715, in one day, and on the following day 1566 in four hours. By means of these traps, it is asserted that more curculios may be destroyed by a single person, in a few hours, than has ever been done by three men with the old fashioned sheets in a week.

Now is the time to try the "Ransom traps," which will certainly be of immense value to all who have fruit trees, if the process proves as efficient in other hands as it is represented to in be those of our Michigan friends.

WALLA WALLA FARMER.

The first number of a four-page or quarto paper, half the size of the NEW ENGLAND FARMER, has been received. It is published at Walla Walla, Washington Territory, by A. H. Simmons, weekly, at $2.50 a year. Washington Territory comprises an area of 68,000 miles,—some 3000 more than all New England. This is equal to 43,520,000 acres; of which, the *Walla Walla Farmer* says, about 20,000,000 acres are prairie, and about the same quantity timber, the remainder mountains. It is estimated that about 5,000,000 acres of the timbered lands are susceptible of cultivation, the remainder comparatively worthless after the timber is removed. The Cascade range of Mountains divides the Territory into two unequal parts —eastern and western—differing widely in topography, soil, climate, and productions.

The western portion is densely timbered with fir, cedar, oak, &c., with an occasional small prairie, soil varied, river bottoms sandy mould with clay sub-soil; high prairies are gravelly or light sand. Its climate is humid, but remarkably healthy.

Eastern Washington may be described as a vast rolling plain, traversed in all directions by rivers and creeks, the principal of which is the Columbia, having for its tributaries in this Territory, the Snake, Spokane, Walla Walla, Winachee, Okinakane, Yakima and Clickitat. The soil is uniform, a rich sandy loam, producing a thick, heavy mat of bunch grass. On all the streams is found more

or less timber, but the mountains have to supply the lumber, rails, &c. For climate, safely can eastern Washington challenge the world. A dry, clear sky with an atmosphere balmy and so pure that objects miles distant seem to be but a few hundred yards. Prolific in wheat, corn, oats, barley, rye and buckwheat; in apples, pears, peaches, plums, grapes and small fruits of all kinds. Cattle, on the bunch grass, without other feed, remain fat the year round. Health is such the doctors complain of their pockets.

Walla Walla, in the southeastern part of the Territory, latitude 46, is thirty miles from the navigable waters of the Columbia, two hundred and thirty-six from Portland, and two hundred and eighty-six from Salem.

AGRICULTURAL ITEMS.

—G. C. Cox, Secretary, gives notice that an association has been formed in Manchester, N. H., for the settlement of government lands in Kansas under the Homestead Law.

—The Boston and Albany railroad has a new article of freight in manure, which is brought from the stock yards at Albany to enrich the tobacco fields on the Connecticut river.

—Horses have been sold from Middlebury, Vt., for the foreign market this Spring to the value of more than $20,000, and horse dealers call it a dull season at that. One was sold last week for $3000 and taken to New York for a carriage horse.

—A man died lately in Montgomery, Penn., of the glanders. During last fall and winter he took care of a horse that had this disease, and the poison got into his blood and was the cause of his death.

—Mr. Pickney stated at a Club meeting in Lansing, Mich., that he had learned that the Northern Spy was a better keeper when grown on clay soil than on sand; so with the Greening. Mr. Potter said his winter fruit was grown on sandy soil and did not keep well.

—The monthly report, of the Agricultural Department for March and April, from 417 counties gives the number of sheep killed by dogs during the past year at 99,389; while it is estimated that full returns would swell this census of slaughter to 500,000, with an actual money loss of $2,000,000.

—To make an excellent ointment for burns, bruises and cuts, also for sore teats on cows, a correspondent of the *Western Rural* says, take one teacupful of lard, three-fourths of an ounce of laudanum, one ounce oraganum; warm the lard, put in the others when a little warm, and as it cools, stir to mix well, then it is ready.

—A farmer who was brought up on the Western Reserve in Ohio, says that throughout the dairy region the white clover that was once so plentiful in all the pastures had almost entirely disappeared. A few years ago the pastures were white with blossoms, but now a white clover blossom is rarely seen. Outside the dairy region, where a different system of farming prevails, the white clover is as plentiful as ever.

—The forests are dying out in certain parts of Virginia. The chestnut trees have already submitted to some deleterious agency, and their growth is nearly exhausted, and this year the oak, and in fact all the trees of the forest in certain sections, are dying. No explanation of this disastrous visitation has yet been given.

—According to the report of the Trustees of the Pennsylvania Agricultural College, liming on the eastern and central farms was without benefit, while on the western ones a liberal application increased the corn crop nearly one-half. The presumption is that in the first instance the soil needed something else, while in the second, lime was precisely what was wanted to impart vigor to it.

—A poultry raiser who lost nearly all his chickens in 1867, after trying all the remedies he could hear of, informs the *Prairie Farmer* that the next year he tore down the old poultry house and made a new one in a new place, hauled off the manure and surface soil from the old place and sprinkled lime over the ground. He now makes a new poultry house every year, a cheap building or pen of rails, and has healthy hens.

—A correspondent of the *Rural New Yorker* says that in one case the onion worm was driven off by applying a decoction of red pepper pods while hot to the onions; in another case, by throwing the washing suds over the onions; and the editor has heard market gardeners say they had found a suds made by mixing soft soap and chamber lye, and allowing it to stand two or three weeks before using, efficient. Beside, it is an excellent fertilizer.

—To remove white hairs that appear on horses from the use or wear of the saddle or harness, a correspondent of the *Rural New Yorker* takes a piece of fresh butter or lard, large enough to give the spot a thorough greasing; rubs the same with the hand until it becomes quite hot, repeating the operation at least three or four times, and the white hairs soon come out, and hairs of natural color take their place. Thinks the best time to do it is in the winter before the new coat starts.

—The following rule for determining the amount in bushels of a box or bin was sent to the New York Farmers' Club by Merchant Kelly, of Bentonville, Ind. If you multiply solid feet by 45 and divide the product by 56, the quotient will be bushels, because one solid foot is just 45 56 of a bushel of 2,150 2-5 inches. Example: How many bushels in a crib, box, bin or wagon-bed 8 feet long, 4 feet wide, and 2 feet deep? 8, 4 and 2, multiplied together, make 64 solid feet, and 64, multiplied by 45, makes 2,880, which, divided by 56, gives 51 3 7 bushels in said vessel. If it be ears of corn, deduct for cobs. Some persons deduct a half for cobs.

SALTPETRE.

FROM some experiments which we have made with this salt, we are inclined to think that its importance as a manurial agent is not justly appreciated. In these experiments, at a cost of *five* cents per pound, we found it among the cheapest fertilizers we have ever used. Its use is not a modern discovery. Virgil recommended it to Italian farmers. The first English author who wrote upon husbandry in 1532, Anthony Fitzherbert, describes it as having the power to insure to the farmer the most abundant crops. A hundred years afterwards, Evelyn, in a *Discourse on Earth*, told the farmers of his age, that if they could but obtain a plentiful supply of *saltpetre*, they would "need but little other compost to meliorate their ground." Even Jethro Tull, who zealously denied the necessity of manure of any kind, placed nitre at the head of his list of those substances which he deemed to be the essential food of plants. But it is only in modern days that saltpetre has been extensively employed as a fertilizer, for it is not long that it has been produced in quantities sufficiently large and at reasonable prices to enable the farmer to profitably use it as a manure.

It is so extensively used in the arts, and especially in the manufacture of powder, that the price has been thought too high to make it a profitable investment in the soil. In large quanties, however, and in ordinary times, we think it may be secured at as low prices as Peruvian guano or the superphosphate of lime. It is much more difficult to adulterate it than either of those articles, so that the pure salt, only, would be purchased.

Saltpetre is a natural product in some soils in hot climates, as in India and South America. It is also manufactured by a curious chemical process, in the following manner: Animal substances, flesh, hides, &c. are mixed with lime and earth, and this mixture is moistened and left to putrefy. The result is *saltpetre*. It is found in Peru in a thick stratum 3500 feet above the level of the Pacific ocean. It abounds in Ceylon, Persia, Egypt and Spain, and is frequently found on the surface of the ground, where it is naturally generated under favorable circumstances, and in situations much more frequent than the farmer is wont to suspect.

"Wherever ammonia is copiously generated, as in stables, farm-yards, &c., and wherever the nitrogen, which forms a component part of ammonia, at the moment of its extrication has access to potash or calcareous matter, there saltpetre is usually formed." This is naturally done so copiously, in some of those situations in which the farmer is placed, as to form fine crystalline exudations on the walls. This will account, in some measure, certainly, for the remarkable growth which nettles, horse radish, sun-flower, nightshade, and some other plants, make about the houses of not over-tidy farmers. It slowly collects on the plastered walls of houses, so that during the Crimean war saltpetre was in such demand for the manufacture of powder, that hundreds of the old dwellings of France and England were stripped of their plaster walls to get at the modicum of saltpetre which had formed upon them. Those persons who gather saltpetre from the earth's surface in Southern Africa and Hindostan, and those who have prepared artificial beds in Spain from the sweepings of the streets in Madrid, state that nothing more is needed than a certain proportion of decomposing animal and vegetable matters, with some potash, and calcareous matter. If our farmers will but investigate *their own resources*, perhaps many of them will find that they possess all the essentials within themselves, and in their own soils for the formation of saltpetre.

TOP DRESSING AND CLOSE CUTTING.—On lands not too wet all will agree with me that it is best to top dress. We should give more attention to the composting of manures to be applied as a top-dressing to our mowing fields. Let any farmer each year make but five or ten cords more of manure by hauling in muck and leaves into his hog-pens or barn-yards to absorb the urine, and apply it as a top-dressing soon after haying, and the results will be wonderful. The grass will begin to grow immediately after the first fall of rain. The roots are nourished and are better protected against frost in winter, and if fed off in the fall it is not done so closely as if no manure had been applied.

One reason why grass crops run out is because they are fed too late in the fall, or over fed. In the spring they should not be fed at all. Cutting some kinds of grass too low is often very injurious. When the top of the root of herdsgrass is taken up by mowing or

feeding too close by sheep, it begins to fail and the owner is at a loss to know why it has run out so soon, little thinking that this close shaving of the roots is the cause of his loss and disappointment.—*Maine Farmer.*

From the New York Tribune.

THE ROTATION OF CROPS.

BY SERENO EDWARDS TODD.

The rotation system, which good tillers fix,
Embraces five seasons, and sometimes full six,
When one crop succeedeth through many long years,
Each harvest decreaseth, and dwarfeth the ears.

If herds of neat cattle or sheep be thy care,
Then grass in rotation must form a good share.
When corn, barley, clover, and turnips, and wheat,
Comprise the rotation, field peas will be meet.

Ere ploughing and sowing, the tiller should know
What crops the ground liketh the better to grow.
First, break up thy grass land and plant it with corn;
The field, the next season, let barley adorn.

Succeeding the barley, sow buckwheat or oats;
Then harvest a pea crop to nourish your shotes.
Oft ploughing and teasing and weeding the ground,
With liberal compost scattered around.

And sprinkled with ashes to make the land sweet,
With lime and some bone-dust to fatten the wheat.
The next, in rotation, a crop of red clover:
When blossoms are fragrant, then let the plough cover.

A six-years' rotation now beareth the sway,
And showeth the tiller a progressive way;
A six years' rotation will cattle increase;
Will multiply bushels and debtors release.

A six years' rotation, when fairly begun,
Will harvest two bushels where now groweth one.
A six-years' rotation, as all will agree,
Two years' yield of clover is better than three.

When poor soil needs succor, to keep the land clean,
Grow clover and sowed corn to turn under green:
But where fertile muck and light soils abound,
Arrange the rotation as suiteth the ground.

BLADDER PLUMS.—The singular puff-ball growth of some plums, particularly the common red plum, is believed by the *American Naturalist* to be the effect of a peculiar parasitic fungus, and not of the curculio or other insect. Our correspondent, W. H. White of South Windsor, Conn., states in the *Country Gentleman* that some trees in his garden of the red plums which produced only these abortions were grafted to the Washington and Blue Gage, and produced perfect fruit for several years, until the trees were broken down by high winds.

WINDHAM COUNTY, VT.—The Fair of the Windham County, Vermont, Agricultural Society will be holden September 28th and 29th, 1870. The following is a list of officers.

President—Hon. O. S. Howard, Townshend.
Vice Presidents.—Col. H. Plimpton, Newfane; Ruel Smith, Esq, Wilmington.
Secretary and Treasurer.—W. A. Stedman, Newfane.
Board of Managers.—John Ayers, Grafton; Alonzo Dutton, Dummerston; D. E. Robbins, Windham; Geo. E. Hammond, Wardsboro'; Henry Winslow, Putney; Sidney Perry, Rockingham; Phillip Rutter, Townshend; John Muzzey, Jamaica; A. J. Morse, Newfane.

W. A. S.

For the New England Farmer.

THE GARDEN IN JULY.

How pleasing to the farmer's wife, if to no one else, it is to have a good garden where she can go and select from a variety of products, vegetables, fruits, &c., sufficient to add variety for the table, which will tempt the palate and give a relish to the more common daily fare; and answer the question that so often arises in her mind, What shall I get for dinner? It is pleasing to all to go into the garden and see "how things do grow." "To-morrow I shall have a mess of new potatoes dug for dinner; these marrowfat peas will furnish us a mess by the last of the week, and I shall have string beans when I want a mess now; these cucumbers will taste quite cool and refreshing; beets have already been on the table in different dishes; lettuce, radishes, cress and other salads have been enjoyed freely; now come the small fruits, strawberries, currants and raspberries." Who would be without them, when they cost so little to grow them? While driving up the haying and harvesting do not do it to the entire neglect of the garden. Better take a hand a day from the hay field and put him in the garden. But there is seldom need for this. A few moments' attention in the morning, evening, or when the other work cannot well be attended to, will suffice to accomplish very much more than any one unused to it will think possible, if the labor be rightly directed and the time well improved. The best success is met with if we follow up every department of the garden with the hoe and watering pot. Liquid manure, judiciously applied, tells now with redoubled effect; make the most of the sink spout and other sources of liquid manure, too often allowed to go to waste, creating offensive odors, disease, &c. Water newly set trees, dwarf pears and grapes, keeping the mulch *moist*, not wet. Liquid manure is the greatest inducer to swell fruit of any kind. Do every thing *seasonably*. Take the weeds, &c., when they first appear. Leave no vacant spot. It is better to have two, three, or more crops, than one, when they may be had as well as not.

BEANS.—Gather for use as they become fit, saving a few of the earliest and most perfect to ripen for seed. Do not forget to plant some early ones for a late crop of string, or for canning for winter use and for seed. Very good pickles are made from string beans.

BEETS.—It is not too late to plant early varieties for winter use, in rich, mellow soil. Hoe frequently, and thin to six or eight inches in the row. Beets may be transplanted almost as well as cabbages. There is little danger of having too many, as, if not needed otherwise they are good for the cows and pigs.

BLACKBERRIES.—As the new shoots grow they should be tied up to the trellises or stakes. Shorten in the main stem and branches to in-

duce the formation of fruit buds; pull or cut up small canes, unless there is a desire to multiply them. Branches laden with fruit should be carefully and securely tied up.

CELERY.—Continue to transplant into well prepared ground till the last of the month, for the late crop. Hoe and water often to induce rapid, tender growth; with good drainage there is little danger of giving too much water. Celery depends for its goodness for the table upon rapid growth.

CABBAGES AND CAULIFLOWERS, for late crops and use, may have the seed sown and transplanted. There is always a good home market for cabbage, as, if not otherwise used, they are good to increase the flow of milk, if fed to cows. They need frequent hoeing and culture.

CORN.—Do not fail to plant a few hills of that early variety for late use, drying or canning; any surplus will be readily taken by the cows or pigs, and they will reward you therefor; the green succulent stalks are excellent fodder.

CUCUMBERS may be planted for pickling. Guard against insects, as hertofore recommended; hoe and water till the vines are well spread over the ground. The small cucumbers, pickled in cider vinegar, make our best pickles. They may be packed down in casks and salted as pork is put up; if sufficient salt is used they will make their own brine. They will need be weighted down to keep them covered in brine.

CURRANTS.—The green or half ripe ones make excellent sauce, pies, &c., and when ripe, eaten with sugar, they relish well in moderate quantities. Their juice expressed, a teacup of fruit to a pint of water and sweetened, makes one of the most agreeable and refreshing of summer drinks. Well ripened, they make excellent jelly, of which there should be a full supply, in case of sickness, for drinks, &c. Very good currant wine is made from the juice—one quart of juice and three pounds of sugar to the gallon. So good a fruit as the currant ought to receive good care and be found in every farmer's garden in abundance.

ENDIVES.—Green salads, at all seasons of the year, are very refreshing and much relished by most persons. Lettuce stands at the head in all garden culture, but there are few kinds that will stand the heat of summer to head,—will become bitter or of disagreeable taste. To supply its place, we have the endive, which will remain in perfection after lettuce has failed, during autumn and winter. Sow the broad-leaved variety any time during this month, in drills, and transplant to fourteen inches apart, in good, generously rich soil. After the leaves attain the size of a dining plate, gather together and tie, to blanch.

GOOSEBERRIES.—This is a good fruit, too seldom found in the farmer's garden. They require mulching with old pots, kettles or other rubbish; treat them according to their nature, give them plenty of air and you will get good crops. Thin out for sauce; the well ripened are good eating from the bush and at dessert, with sugar or sauce.

GRAPES.—To obtain the best and nicest fruit, the shoots need thinning and pinching back, the bunches to be thinned to one or two on a branch, and the bunch thinned, where the fruit crowds. Liquid manure, well diluted soap suds, dish water or like slops, should be given freely till the berries begin to color.

HERBS.—The best are dried in the shade, cut in the flower, and preserved in boxes that will preserve their aroma.

INSECTS.—The gardener should be constantly on the look-out for them and crush them in the bud or egg; study their habits and experiment to destroy them. They are alike destructive to fruits and vegetables; toads, birds and chickens are excellent destructives of these pests.

MELONS.—Give them good culture, same as for cucumbers. A thin board or flat stone placed under them as they grow, will induce them to ripen more evenly.

ONIONS.—Weed and cultivate, without hauling dirt to the bulbs. Thin to three or four inches, if good size is desired.

SEEDS.—Look closely after seeds ripening now, not to allow them to waste. Better gather before the plant stem and seed vessels dry, and let them mature under cover.

STRAWBERRIES.—After the crop is removed, weed the bed and hoe the plants, keeping the runners cut, unless you desire to increase plants; thus kept a bed will last in bearing from four to six years, if well fertilized annually.

TOMATOES.—Reserve a few of the earliest and best for seed. Keep the vines pruned and tied to a stake, if you would get the greatest amount of good fruit.

W. H. WHITE.

South Windsor, Conn., 1870.

GRAFTING GRAPE VINES.—Keep the scions in the cellar or other cool place until the first flow of sap is past, or until the vine has well started. Then dig down beside the vine, cut off a root four inches below ground large enough to graft into, cut the graft with two or three eyes and cleft graft the same as you would in grafting apples or pears, wind it firmly with cotton twine, brace it up with a stick and fill up the hole, leaving the upper eye just above the ground. Don't put wax around the graft, as it forms a cup that will hold the sap, which sours and kills the vine; the bottom string is sufficient and will decay and loosen as the vine expands with its natural growth during the season.—*J. Terrill, Cleveland, in Ohio Farmer.*

CLOVER.

CLOVER is a great institution, the value of which is not as fully understood as it should be. The field for its development is the prairies of the West, where the fertility of the soil is annually depreciating, for want of manurial matter, to supply the drain that is made upon it.

When there is but little stock in proportion to the number of acres cultivated, and that little is not stabled in the winter, a large amount of manure cannot be saved to enrich the broad fields of corn and wheat. What shall be done? Two-thirds of the fertility, so far as wheat is concerned, is lost already. Soils that a few years since yielded thirty-three bushels now yield eleven. The remedy is forthcoming just when it is wanted, and experience is teaching how to use it. It is wonderful how nature keeps her treasures stored up until the necessities of man compel him to seek for them. Coal has been buried in the bosom of the earth until man wants it to convert water into steam, and iron ore into rails and ships, and now he finds it cropping out all over the earth.

The fertility accumulated in the virgin soil has sufficed for one generation, and now the little brown clover seed has been given to furnish machinery by which the elements of fertility may be absorbed from the atmosphere, and pumped out of the earth to supply the wants of another generation. On most lands four or five pounds of clover seeds and two or three hundred pounds of plaster to an acre, will in a little more than a year, if the soil is tolerably good, be converted into two tons of the very best hay. This material has been chiefly derived from the atmosphere, by the plants which have the power of changing carbon and oxygen into solid matter in their stems and leaves. This they deposit in the soil when they have completed their growth and fall and decay, and thus fertilizing matter is drawn from the atmosphere by the ton, annually, and placed just where it is wanted for the next crop.

And the clover roots, yes, the clover roots, what have they been doing all this time? If not interrupted they work on two years, and then withdraw from the field and make room for other workers who succeed them. We call them biennials, indicating that they take two year's jobs. But what an amount of work they do in this short time. They will push themselves into the soil, one, two, three, four, five feet, burrowing into and loosening it, pumping up water from it, and the various minerals held in solution, and depositing them in the stems of the plants, along with the materials drawn from the atmosphere, and thus we have a compost of silex, lime, potash, soda, magnesia, alum, iron and the rest, mixed with carbon, oxygen, nitrogen, &c., as food for the next crop. These clover roots are grand workers. They are no idlers. They do not stop when they have worked eight hours. When one of these little fellows finds a particle of lime or sulphur, away down three or four feet underground he seizes it as his lawful prey—indeed it is the very thing he went down after, and has been hunting after all summer,—and now he sucks it into his open mouth, and pulls and tugs like a boa constrictor swallowing a goat, until he gets it within his œsophagus, then he pushes it on and on through the four or five feet of his longitude, and deposits it in the stem of the plant, to be used where it is wanted in the process of construction. We should like to see all the roots from an acre of thrifty clover washed and shook out, dried and thrown into a heap. Would there be two tons of them,—as much as there is of the plants above ground? If so, these four or five pounds of seed would have drawn from the air and the ground four tons of solid matter, ready to be rotted down into plant food for the crops that are to follow.

Not only has this amount of manurial matter been prepared, but the soil has been bored and loosened in all directions, so that the air could penetrate it, and warm it, and act upon the mineral matter it contains. This soil is then in a very different condition from what it was when the clover seed was sown. Its mechanical condition is greatly changed. The rain can penetrate it. The roots of wheat can run down into it. The decaying vegetable matter upon the surface, as it dissolves by the rain, can accompany the roots into the earth, and yield up to them the nourishment it contains.

If the soil is too poor, or too much exhausted to yield a full crop of clover at the first sowing, plough it into the ground, and repeat the process. The crop will be increased, and the

soil improved by every repetition—until at length, you will get the thirty bushels of wheat.

But we are impatient. We want to get the thirty bushels in one year. We cannot wait. But Providence is patient. "The mills of the gods grind slow." We must wait. Guano at $60 a ton, and then transported a thousand miles won't pay, and if it would pay one year, it will leave the land in a worse condition than it found it. We must make the manure on the soil where it is to be used. We can get labor, when we cannot get manure. We must put as much labor on ten acres as we now put on twenty, and we shall get more wheat, and more corn, and improve the soil instead of exhausting it. We must raise clover.

For the New England Farmer.

KICKING COWS--MODES OF MILKING.

I have a young cow, one that was very hard to manage when she had her first calf. She was the most spiteful kicker that I ever attempted to milk. The kick was not one of the uncertain sort; there was no room to doubt of her intention to *hit*, and to hit hard. Now I am not *afraid* of a kicking cow, but confess to a *dislike* of that habit; and I felt in this case a strong desire to convince her of the impropriety of her conduct, and to persuade her to a more quiet course. When all gentle means failed, I tried tying up her fore leg on the milking side, but she would lean over and balance on two legs, and kick with the third; then drop on her knees and give another vigorous kick, the instant a teat was touched. Then her hind legs were tied together, and her nigh hind leg tied to a strong staple driven into the floor behind her; but under both these modes of treatment she would struggle and kick furiously, so as to make it quite impossible to milk her. At this stage I remembered that a neighbor had recommended, in extreme cases, the putting a chain around the cow's body, just back of her shoulders, and with a stick twist it so as to bring the chain tight, but not tight enough to hurt the cow so long as she remained quiet, having a careful person to hold it in just that condition. I tried it and the plan worked to a charm. She found she was hurting herself, and the hurt was certain, and rather severe, whenever she kicked; and so, after a while, she submitted, with only an occasional motion, the beginning of a kick. It was only necessary to use the chain once more, and the cure was complete. Here is, I think, the reason, of the efficacy of this method of treatment: the cow has sense enough to perceive that she *hurts herself* by kicking. If you beat her with a stick, she sees that *you hurt her*, and she kicks again in self defence or revenge. The same cow lately scratched one of her teats, and in the same unpleasant way declared her intention not to be milked. But two applications of the chain convinced her of the error of her way, and she again became perfectly gentle.

Apropos to the general subject of milking. A few months ago, I read in some of the agricultural papers, a quotation from Professor somebody, (the name is forgotten) which contained remarks that seemed to me to indicate that the author was a *hobby*-rider, and one of the fastest sort, too. I was half disposed to bring his case before the "Society for the prevention of cruelty," &c., and have him fined for cruelly driving his hobby at a rate beyond what it could bear. But as he apparently belongs to that Society, and was laboring in its behalf, it was thought best to let him off this time. The Professor had probably been visiting in the country, and had seen some great, coarse, cruel-minded, or at the least a thoughtless farmer milking a cow,—caught him in the very act of milking in what is called the stripping method; that is, taking the teat between the thumb and forefinger, and pressing it, and at the same time bringing the thumb finger down to the end, thus forcing out the milk. This style of milking was severely condemned, as cruel in the extreme. It was pronounced dangerous, also, to thus roughly pull that delicately formed organ, the cow's udder. Now I have great respect for that humane feeling which is pained by cruelty to any living thing, be it of mankind or wormkind. I honor gentleness to the animals we make use of, more than I do the strength and skill that enable us to bring them under our control. But I doubt whether the worthy Professor ever milked a cow in his life. If he ever milked many, he would have learned that a cow whose milk flows moderately easy will generally *prefer* the method of milking which he condemns. This kind of milking partakes of the nature of rubbing. Did he ever know a cow that did not like to be rubbed? In most cases rubbing the teats and udder will soothe the animal, and make her quiet. For the purpose of testing the Professor's opinion of the exceeding delicacy and sensitiveness of the cow's lacteal organs, I have recently many times taken hold of the teats of different cows, and pulled downward smartly, with a force not less than that of a four-pound weight, without the cow's showing the slightest sign of being hurt. Yet this was a much harder pull than would ever be given in milking. And if the udder is so easily injured, why the instinct of the calf to butt when sucking? That butting is surely rougher treatment of the udder than it receives when a man simply forces the milk out by stripping.

There are some young cows, too, whose teats are so short and small that the milk cannot be taken in the usual way of milking large-teated cows. I am now daily milking a cow,

whose teats are hardly so large as my finger, and only half as long. How shall I take these in my big, clumsy hand, and press out the milk? I cannot do it. I should like to see the Professor try the job with his. I am quite confident, that before he had half drained the udder he would resort to the stripping method, and be ready to take back at least a part of his remarks as published in the quotation above referred to. M.

Concord, Mass., 1870.

For the New England Farmer.

"SHALL WE RAISE OUR CORN?"

Why not? The climate and soil are favorable. If so, then what good reason have we for not furnishing a portion, at least, of the corn we need for eating and feeding? As an article of food for man it is really more valuable than is supposed. Indian corn furnishes more oil than other grains with a fair amount of starch. For cold weather it will supply the place of animal oils or meat, or both, perhaps.

In deciding whether we "shall raise our own corn," there are many things to be considered. As a rule, we cannot raise any one crop on the same piece of ground for a long series of years, profitably or successfully. There are crops which, even if we can buy at a less cost than we can raise them, ought not to be thrown aside, for many reasons. Potatoes very rapidly impoverish the land upon which they are raised. So with tobacco, hemp, flax, &c. Not so with oats, clover, wheat, peas, beans and barley. And still, either of the last named will do much better not to sow two crops in succession. On soils such as are found West on the river bottoms or low prairies, crops may be and are raised for very many years without a single application of manure. There is land to-day, lying contiguous to the Genesee river, in the State of New York,—thousands of acres, too—that have been cropped almost continually for the past seventy-five or one hundred years, without one single application of manure, and yield from seventy-five to one hundred bushels shelled corn per acre; one hundred bushels of oats, and other crops in proportion. I have seen upland, far away from river bottoms, in the State of New York, cropped for twenty successive years with oats, without manures of any kind, growing fair crops. But even then a rotation of crops is far better.

No season is alike favorable for all crops. Corn wants warm days and nights, with occasional showers; potatoes and turnips want moderately warm weather, with cool nights and considerable rain; flax wants about the same; wheat will not do well in good corn seasons; oats are hardy, but will do well when wheat is a good crop. So that we cannot tell certainly what to raise until we try it.

We ought to raise our corn, or a portion of it. Corn is more profitable than any other crop we can raise, except perhaps, potatoes, and they may be excepted quite often. If we live near markets for garden vegetables and the like, the raising of corn as a money making concern would not be thought of. But farmers away from such advantages would do well to reflect before they wholly throw aside the raising of this valuable grain. One acre of corn fodder carefully and properly saved, is worth more than an acre of grass even if it yields three tons.

On Massachusetts soil prepare well your land and make such applicatione of manure as is needed. Plant in rows both ways three and one-half feet apart; be sure to have no more nor less than four plants in each hill. Cultivate well. Don't be afraid of hoeing too much.

Cut up your corn at the ground early, as soon as your corn is all well glazed. Stand it up around hills not cut, at equal distances about sixteen hills in a bunch, or more if you prefer, put up carefully, bind firmly at top so that it cannot be blown over. Let it stand until thoroughly cured; don't husk it too soon. Your corn is then a sound crop, even heavier than if you had taken off the top stalks, and your fodder is worth more than it has cost you to raise the crop. I speak not at random, but from an experience of thirty years on the farming lands of the Genesee country in the State of New York.

Yes, "raise our own corn" for the profit of it. It does not much impoverish the soil. The land is in a better condition for potatoes, oats or barley after the corn crop is off, which is an item worth remembering. With care for the health of your farm you are adding to its value because it is more productive. And while you might have more dollars, cash, at the end of ten years to raise potatoes, your farm would need propping up like an old horse with all the vital energy gone. Every acre of land which you so nurse that you can soon double the amount from, is so much capital, and better than in a savings bank. Certainly, "we will raise our own corn."

W. F. WOODWARD.

Maplewood, Mass., April, 1870.

For the New England Farmer.

THE QUINCE TREE.

Twenty years ago, bushels of quinces were raised where now but a few pecks are seen; and in many localities the trees are dead and gone. Their failure is owing to mismanagement and neglect; and these two things will kill any fruit tree. The quince tree demands food as well as our horses or cows; but if we give it only once or twice a year it will grow and flourish.

But this is not all that is needful to its growth, it also demands cultivation; it requires pruning and training, but does not often re-

ceive it. How rare it is to see a well-formed quince tree! Quinces are usually grown in the shape of huge bushes, with no more attention paid to their shape, than is given to the form of a syringa bush. It is often seen with two, three, and even four stems springing from the ground, and its head is composed of crossed branches and twisted shoots. A quince tree with a straight, smooth stem full three feet in height, and then branching forth into a stocky, compact growth is a *rara arbor*.

It is usually considered as a fruit which requires no care, but will grow and flourish like a wilding of the forest. Its extermination in many places—is now telling a different story, and the question is asked, "What is the matter with the quinces? mine are all dying."

Quinces will thrive well in common garden soil if well manured and pruned, and there is no more beautiful sight than a quince tree filled with flowers or fruit. Its flowers are very beautiful—its fruit almost equals the orange in form and coloring. The orange quinces are our northern substitute for that peerless southern fruit. They equal them in beauty and fragrance, but do not possess their juicy qualities; yet for a pie, tart or sweetmeat, they are fully equal. Indeed there is no fruit in the New England or middle States more to be desired for culinary purposes than quinces.

In cultivating them, pruning is most essential, in order to strengthen their growth. If the tree is growing in rich, well moistened earth, it will throw out a long straight shoot. Prune off all lateral branches, and cut back the shoot to a foot and a half or two feet, and tie it to a firm support. It will grow well that summer. In the winter pruning, spur in the laterals. In every successive year, manure well, and prune closely, clearing the main stem of all side shoots.

By cultivating in this way, and yearly shortening the main branch a stout tree which will not need support can be produced. Three shoots can be allowed to grow the first year that the head is made; cut these back next season and each will send forth two more, and there will be six principal branches. The fruit of this tree is produced on small, short, stout shoots extending down the sides of the branches, therefore in pruning all superabundant, irregular or decayed shoots should be cut off.

The quince grows finer near the sea-shore than on the inland, showing that it delights in a salty moisture. If a peck of salt is dug around an old, nearly barren tree, its fruitfulness will be greatly increased. Scatter the salt over the surface of the soil, but not close to the main stem. A half bushel of ashes unleached, will increase its growth. From childhood we have loved the quince tree, and desire to speak a good word in its behalf.

The borer has tried its powers upon this fruit, as well as most others, but he can be routed effectually, if one sets about it. Dip some cloths in kerosene and wrap around the stem as far down in the ground as possible, and pile the soil about it. Should the borer have stolen in before this is done, poke him out with a piece of wire. If your trees are badly infested with these pests of horticulture, set out new ones, or strike cuttings from good stout scions. They will grow as readily as a grape cutting;—set them in boxes filled half full with rich soil, and half with wet sand, plant the cuttings in the sand and they will quickly strike root. Cuttings can be planted along the margin of a hot-bed, or even in the open ground. Don't let this rare fruit die out for want of the care and culture you can so easily bestow, if you will only open your eyes to its needs! S. O. J.

For the New England Farmer.

STICK TO THE FARM.

Every position in life has its discomforts. It matters not whether cultivating the soil, attending the sick, selling goods, or preaching a sermon. Some other position, and not our own, seems to be the favored one, and to possess less onerous duties. Confinement in heated, unventilated rooms, as must from present custom necessarily be the case with nearly all professional men and mechanics, is not conducive to either a long life, or a tranquil one.

Unquestionably, man's normal condition is to cultivate the soil. At the beginning he was put into a garden, but getting into difficulty, probably because he was displeased with his employment, and, as is the case at the present day, having ambitious desires in another direction, he was forced to change his location, if not his occupation, and has been grumbling ever since. I believe that farming will pay, but it must be intelligent farming; a conservative exercise of muscles, not an improvident waste of vital forces.

Take care of your health, and don't waste your strength in lifting. Carelessness in this respect, and exposure, bring rheumatism and pleurisy, and they never leave you as well as before. Whenever the aid of machinery can be called in use, it economizes your vitality. Have a system. I know the constant temptation to overdo. Better spend five dollars for hired labor, than fifty in doctor's bills. Do not labor to exhaustion. You can then think as well as work.

It is too true that during the carnival of farmers in the fall, they are always advised, (nine times out of ten by some one not a farmer,) to stick to the farm. The beauties of picking stones and laying walls are skilfully painted, so that for the time all want to be farmers; but the tired, aching back, a week after, does not feel relieved by a sight of the aforesaid orator and adviser driving a pair of blooded horses, without a thought of the far-

mer, except perhaps, to know where he can get a ton of hay the cheapest.

Other things being equal, a resolve to be a successful farmer, involves no more difficulties than cluster around all occupations. Too much land, and too many irons in the fire make the labors on a farm distasteful and unremunerative.

Cultivate less land. Concentrate your forces, for skilful, intelligent labor will win every time. Pursue some specialty. You will get an experience in a few years that is immensely valuable. The successful business man, or the man of leisure always buys a farm as a finality. It matters not whether reared in city or country, the yearning for land comes with mature years. Wisely planted for a beneficent purpose, let us accept the condition. Bringing the same skill to bear as in other professions, we may, like them, reap, some sixty, some ninety and some a hundred fold.

L. W. PUFFER.

North Bridgewater, Mass., April, 1870.

CULTIVATING THE POTATO.

Enclosed I send you an article that I wrote for the New Hampshire *Sentinel*, which you are at liberty to publish in the FARMER.

The raising of potatoes is the most lucrative branch of farming to which those of us who live in the hill towns of New England can turn our attention, and every farmer who produces this crop for the market wishes to plant that variety which will yield the greatest net profit. In order to do this, he must understand which variety is best adapted to his soil. It is well for farmers to try different varieties, and understand which have the most desirable qualities combined.

It is usually the early potato that commands the highest price. But the earlier a potato is, the quicker it loses its good eating qualities; or in other words, the longer any potato is in maturing, the longer it will retain its good eating qualities. The late varieties are not as liable to be cut off by the drought as early ones, for we seldom have a drought last through the whole season. Early varieties will be much better planted as late as the middle of June, in this section of the country. We usually have considerable dry and hot weather from the 15th of June to the 25th of July, that frequently injures the early potato. If planted late there is more cloudy and rainy weather in August for them to grow in.

There is no branch of farming where so great a diversity of opinion exists as in the seeding and cultivating of potatoes. Some say, if you plant small ones, you will get small ones; others, if you want large ones, plant them. I have owned a farm and worked upon it for the last twenty-four years, and have almost invariably planted small potatoes—have planted the Davis Seedling fifteen years, without changing the seed, and seeded with small ones, and never raised larger ones than last year. Care should be taken to seed light with the small ones. I planted a potato in my garden last spring, not larger than a marble that produced but one eye, and from it I raised 2¼ pounds of large size potatoes. My rule is to cut two eyes on a piece, and put three pieces in a hill, three feet apart, or in drills the same proportion. Those that I wish to plant early, before the eye would naturally start in the cellar, I bring up to the light, that I may know that my seed is all in good shape, and am particular to cut the seed myself the day it is planted, (as it injures the seed to heat, after it is cut.) Three or four vines in a hill are a plenty; you will get about the same number of pounds, with less small ones. If your ground is mellow, one eye on a piece, with four pieces in a hill is enough; if tough and soddy, more seed will be needed, for some will not come up.

The eyes of a potato are all connected together by roots running through the potato, and if disconnected, every eye will start, while on the whole potato only a part will start. Potatoes should be planted on about a level with the top of the ground; (vary a little from this rule if the piece be wet or dry.) Hill them up just enough for the potato to grow in and no more. Hoe them when very small, have plenty of dirt between the hills and rows. Potatoes have two sets of roots; one that the tubers grow on, and numerous other roots that run from one hill to the other, near the top of the ground, drawing in food and moisture—hence the injury of hoeing them late. If the ground is left nearly level these little roots will much more readily drink in the dews and showers that fall, and of course will not dry up as much as if hilled up. The potato plant needs considerable light and air, and by seeding light the vines grow more erect, and give a better circulation of air, which has a tendency to preserve them from the rot.

N. W. HARDY.

Nelson, N. H., April 29, 1870.

WATERING HORSES.—Horses should be watered from a brook, pond or river, and not from wells or springs, as the well water is hard and colder, while the running stream is soft and rather warm. The preference of horses is for the soft, even though it be muddy water, to that which is hard. Horses should be allowed in summer time at least four waterings a day, and a half a bucketful at a time and in winter a pailful may be allowed morning and evening, which is sufficient to assuage their thirst without causing them to bloat or puff up. Care, however, should be taken that the horse is not put to work immediately after drinking a full bucket of water, especially if required to go fast, because digestion and severe exertion can never go on together, and

moreover purging is apt to ensue. In some cases, broken wind or heaves is thus produced. Avoid giving warm or tepid water to horses that are often driven from home, because cold or well water will then perhaps be given them, which will be liable to produce a congestive chill, followed by lung fever, and in some cases colic. When horses are thus carefully watered, if one or more of them should refuse their accustomed food, something is wrong, and they should not be taken out of the stable to work or driven further that day; but an examination should be made as to the cause with a view to its removal.—*McClure's New Stable Guide.*

EXTRACTS AND REPLIES.

THE ONION WORM.

Can you or any of your subscribers tell me how I can keep the maggot from eating my onions. Last year they worked upon them till they were pulled. I used sulphur, ashes, hen manure, &c., all to no effect. J. RAND.

South Windsor, Me., April, 1870.

REMARKS.—We wish we could tell you how to prevent the ravages of this insect in some easy way. Last year a Montpelier, Vt., correspondent said that he had saved his onions by removing the earth from the bulb with his fingers, being careful not to disturb the roots, while weeding them. A pound of copperas dissolved in a pailful of soft soap and when thinned with water applied to the onions, is said to be good to keep off the maggot and to promote the growth of the onions. Others have poured hot water from a coffee-pot spout upon the bulb. Who knows of a better remedy? These worms have been very destructive of late in many sections. To avoid their devastations, we have adopted the plan of sowing the seed in August, and when the onions are as large as walnuts, or even when smaller, pull them up, dry them, and the next season as soon as the ground will permit set them out. These are not troubled by the worm.

"ATTENDED STRICTLY TO FARMING."

If John P Gager, Jr., of Scotland, Conn.,—see FARMER, April 23, last column, first page,—got rich by "attending strictly to farming," and wishes to "encourage young men to turn their attention more particularly to farming," by his example, why, in the name of reason, does he confess to having dabbled in the "outside speculations" of saw-mill, grist-mill, shingle-mill and bank-stock? Such an example, it appears to me, is a very poor one to encourage young men to turn their attention more particularly to farming. Actions speak louder than words and in this case their utterances are not exactly in harmony, to my ear G. R. HITCHCOCK.

Champlain, N. Y., April 23, 1870.

REMARKS.—In the neighborhood in which we served our apprenticeship at farming, grist and saw-mills were as generally owned by farmers as were cider mills and maple-sugar "factories." The only shingle mills then known were the kitchens and wood-sheds of farmers, many of whom manufactured shingles by the "thousand." The streams in that vicinity were small, and the mills on them were usually run only during the high water of Spring and Fall, when other farm work was not pressing. Farmers' boys engaged in these "outside speculations," but without a thought that by so doing they were becoming "anything but farmers." As to our correspondent's strictures on Mr. Gager's bank stock, we can only say that we have had no experience in that "branch of farming" ourselves; but after a man has paid for two large farms, and has "a thousand dollars worth of produce on hand," we do not see why he should lose caste as a farmer, by taking a share or two in some Farmers' and Mechanics' Bank. Would a blacksmith cease to be a blacksmith the moment he became the holder of bank stock? Isn't your bedstead a little too short for some farmers, friend Hitchcock, and are you sure it will be best to trim them all down to it?

ASHES OF PINE BRANCHES.

Some years ago I found that pine boughs that fall from trees, gathered up and used as bedding for cattle and hogs, or put in yards, were of no value for manure.

In 1869, I piled the brush, where pines were cut, raked up chips and boughs that had been falling for years, and burnt large piles. About one-third part was clean ashes, the rest coals and dirt. I mixed this with twice the amount of clayey loam from the cow yard, in which a little manure was mixed, moistened with water and shoveled over twice. Of this compost I put one cord on one-fourth of an acre of moist, sandy loam, after breaking up. Sowed to flat turnips and grass seed, and harrowed all in together, the last of July. The seeds came up well, but I did not get two bushels of turnips fit for market, and not ten bushels in all.

Can you or any of your correspondents tell me the cause of the failure? Was it the dry season, or too much compost, or is the ashes of boughs, chips and limbs worthless for manure? I am in the dark about it. W.

Rollinsford, N. H., April 23, 1870.

REMARKS.—So are we. Did weeds or herbage of any kind grow that season on the same soil? If we were on the spot with you, and should get a reply to half a dozen questions which might be asked, perhaps a reason would become apparent. Pine wood yields but a small amount of ash any way—hardly two and a half per cent., according to Prof. S. W. Johnson, while walnut gives over twenty-five per cent., and then the ash itself is worth but little for soap making or other purposes, compared with hard wood ashes.

RAISING OATS.

I have a Scotchman on my farm, (a splendid ploughman) who says the universal practice in Scotland is to plough lea or grass land in the fall, setting the furrow slice up on its edge. In the spring, as soon as the land is dry enough, oats are sown broadcast on the furrows without any manure. The field is then thoroughly harrowed crosswise, and finished off by harrowing length-

wise of the furrows. When the oats come up they have the appearance of having been sowed in drills. In this way he says good crops are obtained. If the soil is heavy or moist, the Black oats do the best. Have you or any of the readers of the FARMER ever tried this method of raising oats.

MILLET.

If a good crop of oats can be obtained as above, why not a good crop of Millet? I have a field of five or six acres, good strong land, part of which is rather moist and late, that was ploughed last fall. Now if I sow millet on this land when it is dry enough to work, without manure, can I reasonably expect a fair crop? Perhaps for millet, it might be well to pass the harrow once over the field, crosswise, before sowing the seed. If any have had experience in this kind of husbandry, let us have the facts. J. B.

New York City, March 22, 1870.

REMARKS.—The foregoing was received with other papers, and having been laid aside with them, appears later than it should have done.

ALSIKE CLOVER.

Within the past two or three years, the attention of bee-keepers has been directed to the cultivation of honey-producing plants, to afford pasturage for bees in poor seasons, or when natural forage fails, and to add largely to their usual stores in favorable ones.

Alsike clover is the best, everything considered, and is rapidly working its way into public favor. The statement has been made by some, that if every farmer would put one-half of the land now seeded to grass into Alsike clover, bees might be very profitably multiplied in our country one hundred fold, and each hive furnish many times its present profit, and quite as many cattle be sustained as at the present time.

Our experience confirms the favorable opinion that has been expressed by others, of this variety of clover. It not only yields a large quantity of honey and of good quality, but is a profitable crop for farmers to grow for stock, or seed, or for both. It grows nearly or quite as large as the common clover. The stalks are finer and not as woody. It has many branches, consequently affords a multitude of blossoms which are very fragrant, and is much enjoyed by the bees. It does not blossom as early by a week as the red clover, and remains in bloom about four weeks. It is particularly adapted to moist ground. The roots being fibrous, are not liable to be injured by the frost heaving the ground. It is prolific in seed, yielding from six to eight bushels per acre.

As this clover has a two fold value, we anticipate that the time is not far distant when it will be more generally grown, and thereby the thrift of stock and the resources of honey will be greatly increased throughout the country. C. B. BIGLOW.

Perkinsville, Vt., April, 1870.

FARMING IN VIRGINIA.

In May, 1869, I left Maine, and after looking about in the South, purchased a farm of 500 acres one mile northeast of Manassas Junction and village, which is on the Orange, Alexandria and Manassas railroad, thirty-five miles south of Washington. I moved here with my family in November last. My farm is on the Centreville road, two miles from Bull Run, and about four miles from the battle-field. Soon after the war commenced, the confederates took possession of this place and fortified the town. Fort Beauregard is within a half a mile of me; Fort Johnston a little further off. The house on this farm was taken possession of and used as the head-quarters of Gen. Jos. E. Johnston; and the house opposite was the quarters of Gen. Beauregard. At a later period, the Union armies got possession of this place, and their generals occupied these houses as their head-quarters also. When the Union army evacuated, they burnt all the buildings on this farm to keep the supplies from falling into the hands of their opponents. This whole country was overrun alternately by the armies, and nearly all the buildings, wood, orchards, fences, &c., were destroyed. Since the close of the war, the village has been rebuilt and is fast growing in importance. The town has two hotels, two small churches, six stores, a grist mill, a foundry, a brick manufactory, with blacksmith, tin and other shops, a weekly paper, &c.

Land can be purchased in this, "Prince William" County, at from $5 to $50 per acre, by the farms, except close up to the villages, &c. The climate is splendid, the water good, and markets near. There is room for fifty thousand small New England farmers to locate in the one hundred counties of this State.

I cannot see why this State, with her railroads and water communications, her central location and fine climate, is not destined to be one of the best and most desirable States in the Union to live in. I shall be happy to give all the information in my power to such as may visit this section.

JONAS GREENE.

Manassas, Va., April 9, 1870.

RAISING CORN.

I regard corn an important farm crop and have given it considerable attention and propose to relate a little of my experience. I do so not because I raise very large crops, but because I obtained a better yield than I have seen by so economical a mode of cultivation as I adopt.

First, plough the ground once about six inches deep in autumn or spring, according to convenience, as well as it can be ploughed. I use none but a swivel plough, and I would not have my ground ploughed into dead furrows and ridges if done for nothing. I intend to have every foot of the ground turned over.

About the middle of May, or soon as the fields will do to work, spread on fifteen loads of thirty-three bushels each of strong stable manure to the acre, and harrow in the manure well with a Geddes' Harrow, lengthways of the furrows. When the ground comes into condition furrow out the field three and one-half feet apart each way, and lay a moderate shovelful of stable manure in the hill, which will require ten to twelve loads to the acre. This manure should be well worked over and in somewhat advanced state of fermentation. Plant on the manure five to six kernels of corn to the hill. When the corn is about five inches high hoe it well with a moderately elevated hill, and thin out to four plants to the hill. When about twenty inches high, hoe the second time, still with a moderately elevated hill, and no more hoeing except to destroy the weeds. I have seen no advantage whatever in hoeing corn too small.

I once saw a field of corn hoed when but just out of the ground and nearly covered up in the operation; then it was hoed the second time when scarcely large enough for the first hoeing and nearly covered up again; then, the third time, still nearly covering it with the earth. The result was the corn never grew to any size, and the crop was almost a total failure, though the field had a fair dressing of manure.

I use twenty-five or twenty-six loads of manure to the acre to raise sixty to seventy-five bushels of corn. I have seen forty loads of manure spread on an acre, and none in the hill, and a smaller

yield of corn than mine the same season. I have seen forty loads of manure spread on sward land and ploughed under with no manure in the hill, and an inferior crop of corn, not more than twenty-five or thirty bushels to the acre. Finally, I have never seen a large crop of corn without manure in the hill.

Seed in my opinion is a matter of much importance in raising corn, but I will defer that subject for the present. J. H.

Shrewsbury, Mass., May 1, 1870.

CHEESE FACTORY.

One of the largest and nicest cheese factories in the country is being built in Shoreham, Vt. It is to be thirty by eighty, and three stories high. It will be sufficient for manufacturing the milk of the 600 or 800 cows which the neighborhood is capable of keeping. It was started by a young man by the name of Adin Perkins, who came into the neighborhood last fall, and purchased a small place of about seventy acres, and has taken $500 of the stock in the factory. Operations are to be commenced by the middle of May, and Mr. Perkins is to take charge of it. His farm and his situation in the factory is equal to a city salary of $5000, and is probably no better than can be obtained in many other places by competent and experienced cheese makers. What a great blessing it would be if the thousands of young men scattered through our country, who are healthy, intelligent and reliable, would follow this young man's steps and take hold with energy to help build up theese, butter and other factories, in the midst of farmers, instead of crowding into the city, with a vague hope of avoiding poverty and hard work, where so few realize their expectations and where so many utterly fail, and die in hopeless poverty. So young men consider well the situations and opportunties that are offered at home.

Shoreham, Vt., April, 1870. LOOKER ON.

ONE HUNDRED AND TEN BUSHELS OF CORN FROM AN ACRE.

On 120 rods of land I raised eighty-three bushels shelled corn, being about 110 bushels to the acre. The land had been to grass about eight years. Was ploughed in the fall, manured in the spring, with common barnyard manure, spread broadcast at the rate of six cords to the acre. Put into each hill of corn a small handful of Bradley's Superphosphate, or about 300 pounds to the acre; hoed three times thoroughly. The above corn is a very superior variety of the twelve rowed, pronounced by all to be the best ever raised in this town. NATHAN G. PIERCE.

Westminster, Vt., April 30, 1870.

REMARKS.—Doubts have been so often expressed by farmers as to the possibility of raising one hundred bushels of "shelled corn" on a single acre of land, that we regret that Mr. Pierce was not more explicit in his statement as to the manner of measuring both the land and the crops in this case.

PREMIUMS FOR INDIAN CORN IN NEW HAMPSHIRE.

Time is short for offering advice on corn planting, but the letter in FARMER of 23d of April from J. D. Lyman, Esq., prompts me to trouble you with a line on the preparation of the land to receive the seed. Manure well; plough "*deep*;" keep clean by frequent ploughing and hoeing, and if there is not a great competition for Mr. Lyman's premiums I shall be sadly mistaken. Last year I ploughed my land for corn with heavy oxen, as deep as the point of plough beam would allow, —turning in the manure and black soil,—bringing up the clay to the top, and the result was such a crop that none of my Irish, Dutch or French neighbors could begin to think of comparing samples. A deal of my corn grew fifteen feet high, had three ears on one stalk, with sixteen to twenty rows on an ear,—which measured from ten to twelve inches long. A result which I think was owing to my reversing the system practiced by a great many farmers out West,—*I hauled the manure on to the land instead of removing my stables.* I wish Mr. Lyman or any other Mr. Somebody Else would make such significant offers up in northwestern Illinois for the growing of corn. My corn is the big yellow Horse Tooth, and was ripe and cut sixteen or twenty days before the first frosts in September. I have many applications for seed from Iowa and Wisconsin. JOHN WHATMORE.

Bridgnorth Farm, Dunleith, Ill., April 30, 1870.

WHEN TO SOW GRASS SEED.

It has been the practice of most farmers to sow grass seed in the spring, with wheat, barley or oats. This will do if the land is in good condition to seed down in April or early in May. But when the land is too wet to work until late in in May or early in June, it is better to sow grain without grass seed, and when the grain is taken off, plough in the stubble, put on the manure, sow on the grass seed, and lay the land down smooth. It is better for the following reasons:—

1st. The young grass will make a more vigorous growth than when sown late in May, with grain, because the grain will grow up quick and overpower the young grass, which will be but feeble at best. And when the grain is taken off, it will sometimes die out by drought and the heat of the sun, and if it does not die it will make but a sickly growth.

2d. The land is generally dryer in August, and in better condition to seed down, and it puts the stubble out of the way, and farmers have more time to do the work well.

3d. Farmers can grow their own seed for less than half the present high price.

Therefore, farmers that have land in grass, and no grass seed on hand, would do well to wait until grass seed grows before seeding down, and let speculators keep their seed for their own use until they are glad to sell at a fair price. D. N.

Amherst, N. H., April 18, 1870.

FARMING, PRICES, &C., IN IOWA.

Having been raised to farming and then engaging in various pursuits for many years, I am again on the farm, and to get and impart information that will facilitate that business in a practical manner is my desire. After traveling through parts of many of the Western States, with a view to location, I pitched my tent in northern Iowa, as the best, all things considered. Having resided here near twenty years, and given some attention to matters generally, I am of the opinion that northern Iowa presents more and better inducements to the industrious farmer than any other place under the sun. Our climate is healthy; our crops scarcely ever fail; our soil is unsurpassed for fertility; our stock is healthy and thrifty; our fruit is abundant, especially of the smaller kinds; our railroad facilities are being pushed forward, so that in a few years our butter will not be sold for twenty cents here and fifty cents in Boston, and other products at the same ratio. Our wheat bins are now groaning under the heavy burthen of last years' crop, forty to seventy cents a bushel, not being sufficient inducement to them to drop their burthen. Unlike the State of Maine our legislature should offer premiums to our farmers to raise less wheat and more potatoes and other

cereals. There will be much less wheat sown this year than formerly in Iowa. And right here I wish to ask if the Norway oats, which are being so highly spoken of, are one grand humbug, and are the Western farmers being imposed upon by sending them common oats, *calling them "Norway oats!"* F. SNEDIGAR.

Fayette, Iowa, 1870.

NEW OATS.—DRY ROT IN POTATOES.—POTATO BUG.

Please inform me what kind of oats the enclosed are. They yield about sixty bushels per acre. I find my potatoes are affected with dry rot. Will it do to plant the sound portion? Last season I noticed the tops to be covered with a very small black bug, oval in form, and very spry. Did they injure the tubers?

Shelburn, N. H., 1870. H. T. CUMMINGS.

REMARKS.—The oats you enclosed are probably what are called "The Surprise Oats." We have had several samples sent us from various parts of New England, all of which are very plump, white and heavy. They are represented to weigh from 40 to 60 pounds per bushel. The oats which have been cultivated for twenty years past seem, like some other plants, to have greatly deteriorated, so that we need some new and better variety. The "Surprise" seem to promise this.

It would not be advisable to plant any portion of a partially rotten potato. The minute, black bug of which you speak has been very destructive to the potato, and although not directly causing the rot, greatly enfeebles and injures the crop. Scatter dry ashes, plaster or air-slaked lime over the vines, as soon as the bugs appear. If done two or three times it will check their ravages, and help the crop.

WHAT WILL DESTROY WOOD LICE?

Will some writer for the FARMER please inform me what will destroy wood lice?

Dover, N. H., April, 1870. J. M. JENKINS.

REMARKS.—If the writer means the common aphis, he may check their ravages, or destroy them by the use of soap suds, tobacco water or whale oil soap.

If he refers to bark lice, *coccidæ*, the question as to what will destroy them and not injure the tree, becomes one somewhat difficult to answer. And even if we could find a remedy that is safe and efficacious, the labor of going over an orchard would be one of considerable cost.

We have recently seen an account of many experiments made by a gentleman, some of which were perfectly harmless to tree and louse, while others did not kill the branches, but utterly killed the foliage as well as the lice. The experiments, however, were continued with all sorts of appliances which he thought might destroy the invaders, until he hit upon one which he states has proved a *perfect remedy*. It was the application of *fish brine;* the brine, we suppose, from the barrel of salted mackerel or other fish. This he diluted, and with a syringe, or pop-squirt, as the boys call them, which cost fifty cents at the tinners, he syringed the trees when in foliage and blossom, without any injury to the tree, but it proved to be *death to the lice!* After this the branches assumed a green, plump and healthy appearance and grew vigorously.

The meaning of the term *coccus* is to *exhaust*, and it seems to us that if some means are not found to check the ravages of these lice, or destroy them, they will eventually exhaust every apple tree in New England. Their presence on the trees is sufficient, it seems to us, to prevent their producing fruit, if they are not themselves the cause of barrenness. Please make the experiment with care and report to us.

APPARATUS FOR A SMALL CHEESE DAIRY.

Please give us an accurate account of the best method, now in practice, for manufacturing cheese where the milk of from four to eight or ten cows is used. As there are not any cheese factories in this section, cheese is made in the *good old-fashioned way*, which does make good cheese. But, alas! like the frogs in the fable, though it may be fun for the eaters, it is death to the makers.

Madison, Me., April, 1870. B. P. J. WESTON.

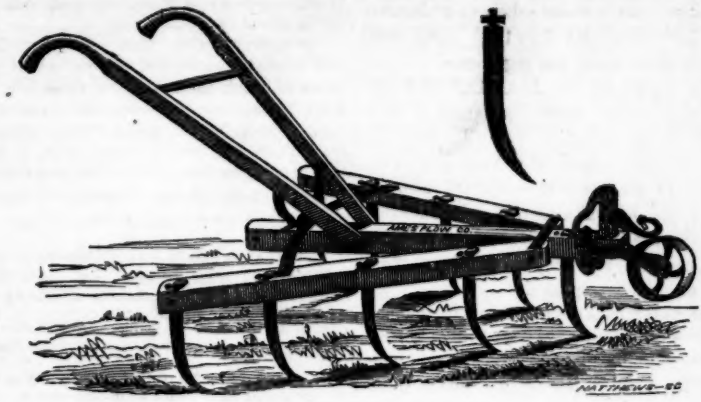
REMARKS.—A few months since, see Monthly FARMER for 1869, page 423, we published directions for furnishing a family cheese establishment of the simplest and cheapest of the "good old-fashioned way;" but our correspondent wants something in advance of this, but not so extensive as the modern cheese factory. Though quite familiar with cheese making in our youth, we presume that our personal experience was with implements, conveniences and processes similar to those which our correspondent complains are much more funny to the eaters than to the makers. How far the factory appliances have been or may be simplified and adapted to private dairies we are not informed, but on behalf of Mr. Weston and others similarly situated, we solicit information from those who have tested improvements on the good old way of family cheese making.

SWELLING ON STIFLE JOINT.

I have a valuable cow that is troubled with bunches on her stifles and is quite lame. I have applied kerosene and chamber-lye and salt without apparent effect. What shall I do for her?

Littleton, Mass., May 6, 1870. I. S. H.

REMARKS.—We mistrust that the leg has been sprained or injured, and that the trouble is in the joint. Sometime when your family doctor is riding by, get him to look at it. It is very important to know the cause and seat of disease. If the bunch is caused by "weeping" from an injured joint, it requires very different treatment from what would be proper in case it is a tumor or sore originating in the skin or flesh. You do not say whether the bunch is hard or soft. If it proceeds from an injured joint, it is probably soft, and contains fluid matter, and it may be of the kind called a bursal swelling. These are often opened at the lower part, and after pressing out the fluid, bandages are applied and drawn over the swelling quite snugly. It may be necessary to repeat the operation.



FRENCH'S PATENT CULTIVATOR.

The increased attention lately paid to dairying, which at the present time is assuming somewhat the type of an agricultural fever, has naturally suggested inquiries for better milk producing feed. Dry hay, especially that which stood till the seed was thoroughly ripened, or pasture feed which has turned white from old age or August drought, is not quite juicy enough for factory cows, or for gilt edged butter, and many farmers are thinking about raising a patch of roots, if not for the daily food, at least for an occasional change of diet for their animals. The remarks made by Mr. Henry Lane, of Cornwall, Vt., in his address at the meeting of the dairymen of that State, about raising beets for cattle and pigs, seem to have been read with much interest by many farmers. But the labor and the bother of raising roots, is the great objection which we fast-horse Yankees urge against their cultivation. To obviate this objection the inventors have been racking their brains to devise ploughs, cultivators, seed sowers, and-so-forth, which they assure us will make a rough field as mellow as a garden, and help us to raise a ton of beets with as little backache as a ton of hay.

One of these newly invented implements is daguerreotyped above. The patentee, Hon. Henry F. French, lives in Concord, Mass., and notwithstanding the proverb that a prophet has no honor in his own country, he has put his cultivator into the hands of his neighbors, who after using it one season speak well of it. A statement signed by John B. Moore, Minot Pratt, Abiel H. Wheeler, Simon Brown and Frederick G. Pratt—names familiar to the readers of the FARMER—closes with the remark that "It saves much of the hand labor, and therefore much of the expense of cultivation of the root crops, small fruits and vegetables." The above cuts show so well the peculiarities of the implement that we need only say that it is a light horse cultivator or harrow, the teeth are steel-pointed, one inch square, about ten long and set cornerwise. Further information is given in an advertisement in another column.

ABORTION AMONG COWS.

Cheese factories originated in central New York, and there the system has been perfected. Little Falls, one of its villages, has become the great cheese market of the country. Cows have been selected, managed and fed for the greatest possible production of milk.

Massachusetts is full of cities and large manufacturing towns, which afford a capital market for milk. Hence many of her farmers have made the raising of milk the great object of farm management. Everything else has been made secondary or subservient to this. Few cattle are raised, and cows are selected with reference to the abundance of milk which high feeding and special management could stimulate them to produce.

Chester county, Pennsylvania, famous for its choice butter and pure milk, is near the

city of Philadelphia; and Cumberland county, in the same state, is near the city of Harrisburg. Both counties had in 1860 more cows than of all other stock put together.

In the report of Dr. J. C. Dalton, Commissioner appointed by the legislature of New York for the investigation of abortion in cows, it is stated that "only in New York and Massachusetts have cases been sufficiently numerous to excite general attention. In Pennsylvania they were found in Chester and in Cumberland counties, reaching ten per cent. of all cases of pregnancy reported."

To our own minds the close connection between abortion among cows, as a disease, and the production of milk, as a specialty, is forcibly suggested by a consideration of the foregoing facts.

Nature, it is said, abhors a vacuum; is it not equally true that she sooner or later protests against all specialties in her productions? The farmers of Illinois make a business of hog-raising, and the protest of nature is in the form of a cholera; in Vermont, fine-wooled sheep are raised till the foot-rot intimates that a change is necessary; New Jersey makes a specialty of peach-growing, and that fever is cooled off by the "yellows;" Cincinnati hopes to get rich by growing grapes, but the mildew blights her vines and disappoints her expectations; sanguine amateurs, believing that if a few hens prove profitable, a larger number may be kept with a proportional profit, try the experiment only to increase the number of those with whom "boughten wit is the best;" cotton is raised at the South, and wheat at the West, till the land becomes so tired of these crops, that the men who cultivate them find it necessary to exchange their old fields for new ones.

But we have another fact bearing on the relation of the milk specialty to this terrible dairy calamity.

In the last *Prairie Farmer* we find the following announcement:—

"We regret to state that this scourge that has so long afflicted the cows in the dairy regions of New York and Massachusetts has at length made its appearance in the west."

The editor, regarding it as one of the direst calamities that could happen to the farmers of that growing section of our country, recently visited the locality of the outbreak for the purpose of gathering what information he could in relation to the prevalence of the trouble. We have read the report of his examination with care, and the only fact stated on which any theory can be grounded to account for the frequent cases of abortion of the cows in this section is the unqualified one that,—

"The complaint is entirely limited to a small number of herds of cows that are kept with a view of sending their milk to Chicago market."

The locality of the disease in Illinois is in the township of Lockport, Will county, conveniently situated on a railroad for the transportation of milk to the city. About 250 cows are kept for this purpose by ten farmers. The section is admirably adapted to dairy purposes. "All the pastures are supplied with water of rare purity, being the product of living springs. The pastures are excellent, and are well provided with shade. The barns are roomy and well ventilated. The cows are fed tame hay during winter, together with bran, shorts and screenings. They are kept in good condition for breeding or giving milk, but are not fat."

In a natural state, cows yield milk for their offspring a few months, which is then weaned, and the mother goes dry the remainder of the year. The milking qualities of our herds are, therefore, largely artificial, and how far this improvement on nature can be carried, is a question that we think is soon to be decided. The limit, we apprehend, has already been reached by some of those who have made the production of the largest amount of milk a study and a specialty; and we regard the disease under consideration as a notice, posted up by nature so distinctly that he who runs may read,—"thus far shalt thou go, but no further."

We do not claim originality for this theory. In the second report of the New York Commissioner, Dr. Carmault, successor of Dr. Dalton, before alluded to, the idea that the excessive production of milk may be the cause of abortion is alluded to, and the significant statement is made that in diseased sections of New York there is "an average excess of 1815 pounds more milk per cow than the statistics of the whole State determine should be the yield."

Can we reasonably expect that the organism of the cow will bear that management and that stimulating food necessary to so great an increase of her milk producing powers? And

if not, in what form could her failure be manifested more directly in the line of our efforts than has been done in those sections where milk has been made a specialty? Is not nature herself offering, by this very disease, to aid us in our purpose to make the cow a *mere* milk machine?

For the New England Farmer.

MASSACHUSETTS STATE BOARD OF HEALTH.

Look out for Poison---Poison in the Air---Poison in the Water.

BY JUDGE FRENCH.

The health of the community is of public importance. The State needs the labor, physical and mental, of every citizen. The imbecile, whether in body or mind, is a public burden, a tax on other men's ability. It is, therefore, a primary duty of the State, in every proper way to limit the number of the feeble, the insane, the idiotic, the sick, just as it lessens the number of the ignorant and vicious, by means of schools and colleges. With this view, by an act of June, 1869, the legislature established a State Board of Health, to consist of seven persons, to be appointed by the Governor and Council. Their duty is "to make sanitary investigations and inquiries in respect to the health of the people, the causes of disease and especially of epidemics and the sources of mortality and the effects of localities, employments, conditions and circumstances on the public health," to advise the government in regard to the location of any public institutions, and make annual reports of their doings, with such suggestions as to legislative action as they may deem necessary. They are also charged with investigating the effects of intoxicating liquors as a beverage.

The board has been organized by the choice of Dr. Henry I. Bowditch, as President, and Dr. George Derby, as Secretary, and has made its first report.

Probably no persons in the Commonwealth are better qualified for their important positions than the two gentlemen named. The paper contains a report upon slaughtering for Boston market, and a report on the sale of poisons, and closes with general observations on The Prevention of Disease. To two of the topics most prominent, as affecting public health, I wish to call the attention of your readers. There are some things beyond the power of the State to control, such as our food and drink and clothing, and warmth and ventilation in our private houses, and our personal habits of cleanliness or healthful exercise. These circumstances may indeed be greatly influenced by correct public sentiment and by instruction through various channels.

Another class of subjects bearing on public health may be controlled by police regulations, such as the management of slaughter houses, the drainage of towns and villages, the supply of pure water and the prevention of disease by contagion, as by vaccination. The great point dwelt upon in this report is

Pure Air.

One would think that in the month of March in New England, fresh air might be abundant and cheap, but the want of it kills, perhaps, more than all other causes combined. We can *see* our food, and we can smell it and taste, so that we have several chances of testing its qualities. What would you think of a man who should go to a neighbor's to dinner and sit down at the table and open his mouth and shut his eyes and tell one of the children or servants to pour in whatever solid or fluid was convenient.

Now we do even worse than this as to the air we breathe. To be sure we cannot usually see the atmosphere or taste it, and I wish we could not so often smell it. But whether we can thus test it or not, it is of far more consequence to health than food.

We may live for days without food, we die in five minutes without air, and we die nearly or quite as quickly in a well, filled with certain gases, or in a close room with a pan of charcoal. Yet we think it a hardship to go to bed without a supper, and make provisions over night for our breakfast, while the little circumstance of whether we shall breathe poison all night for want of ventilation, does not disturb us.

Twenty grown-up men will shut themselves up with an air-tight stove in a close room fifteen feet square to hold a farmer's club, and a majority of them will feel rather injured at the suggestion that air is necessary to respiration; and there is a town, not far from some of us, where a high school house has been lately built at a cost of $12,000, without any provision whatever for ventilation, and where there are some smaller schoolhouses practically in the same predicament.

Think a moment, reader, if the thought does not make you sick, what sort of mixture you are breathing in a close room full of people. A single whiff of a cigar in that room will be perceived by every person in it in ten seconds, which seems to show that the single breath of smoke from one man's lips polutes all the air in the room, and a portion of it goes into every other person's lungs. Not to put too fine a point upon it, is not it a pleasing reflection that a substantial portion of what comes out of every pair of lungs passes through your delicate mouth many times a minute. We who are so squeamish about drinking from another's glass, or even using another's napkin, upon what horrors do we daily and nightly sup, for want of a constant change of air.

The two great causes of consumption, says our report, are first, "collective indoor occupations, which may be regarded as almost sy-

nonymous with the habitual inhalation of air rendered foul by respiration, and, second, *soil moisture.*"

As showing the necessity of pure air for children, it is stated that in the great lying-in hospital in Dublin during twenty-five years before ventilation was introduced, the mortality of new-born infants in the first two or three weeks of life, was one in six. In the twenty-five years following the introduction of good air, the mortality was one in one hundred and four. The teaching of the report on this point is briefly this, that pure air from out of doors, every moment of time, day and night, introduced, if possible, comfortably warmed, is essential to health. "Ventilate the schoolrooms, and the workshops, and the stores and the houses."

A Sound Soil.

Dr. Bowditch is perhaps the best authority in this country as to the diseases classed under the name of consumption, and he is understood to be the first person who deduced from statistics the conclusion that *soil moisture* is among the prominent causes of these diseases. "When a man proposes to build a dwelling in a swamp, warn him of his danger," say the board of health.

In England, in 1865 and 1866, inquiries were made, under government authority, into the effect of drainage-works and other regulations designed to promote health. It appeared that while the general death-rate had greatly diminished, consumption had diminished even in greater proportion, wherever the soil had been rendered dry by means of sewers.

The writer has exhorted so much on the importance of drainage about our buildings, that he is happy to borrow the language of this report. It is well known that in many towns,—and Concord, which ought to know better, is one of them,—a large proportion of the cellars are afloat with water for a longer or shorter time, every spring. The Board of Health say, "Another danger is a damp cellar. Its atmosphere goes all over the house in spite of every effort to prevent it." Again, "most houses in the country are exposed to special dangers from the absence of drains, the refuse from houses being poured upon the ground, thereby infecting not only the air, but water also. In some instances, the kitchen slops, delivered from a spout upon a limited space have in the course of time worn a direct channel to the family well. At any rate it may be useful to remember that the soil surrounding a well is drained by it. In this view it will be seen how important it is for the purity of both air and water, that pigstyes, privies and manure heaps should be kept at a certain distance from the dwelling. Many a case of typhoid, and much impaired vitality ready to succumb to trifling ailments, might be traced to such pollutions. The epidemic of fever at the Maplewood Institute at Pittsfield, a few years ago, was caused by an accumulation of filth, and ceased on removal of the cause. Instances of this sort, where the cause has been sought for and found, and the epidemic thereby stayed, are so numerous that we need not cite them."

Consumption, typhoid fevers and rheumatism are as much the natural, legitimate products of bad air and bad water, as our crops are of our seed.

For the New England Farmer.

LIME AS A FERTILIZER.

On page 22 of the Monthly FARMER for 1870, I find the following remark:—"It should be said, once for all, that oyster shells are composed of carbonate of lime; and carbonate of lime is *not a manurial agent.* It is hard, insoluble marble, and of no value in agriculture." This was written by Dr. James R. Nichols of Boston, and is so directly at variance with the generally received opinion, that perhaps a reference to some authorities upon the subject, will not be out of place.

Dr. Stockhardt says that "the same constituents enter into the composition of chalk, common limestone, marble and oyster shells; that they consist of carbonate of lime, and have for a formula (CaO, CO_2)." He also says that "carbonate of lime is one of the principal constituents of our earth."

Now it is undoubtedly conceded that carbonic acid, one of the elements of the formula, enters largely into the food of plants. Baron Liebig says that if by manuring a field with potash or lime, no increase of crop can be observed, it therefore does not follow, that these substances of themselves, are not efficacious; a certain amount of ammonia is necessary to render them efficacious." Also in his "Familiar Letters" he says; "in limestone are certain elements indispensable to the growth of plants and the presence of which renders them fertile;" and that "we possess substances, which by their chemical action render the constituents of the soil more suitable for entering into the vegetable organism, and one of these is lime." Again, he says: "The cerealia require the alkalies and alkaline silicates, and these are liberated by lime from clayey soils, and hence the fertility of the soil is increased by lime." The latter statement is also found in his "Agricultural Chemistry."

Prof. J. F. W. Johnston in his "Agricultural Chemistry" says, "The use of lime is of the greatest importance in practical agriculture. Marls consist of carbonate of lime, mixed with sand, and are considered more or less valuable for agricultural purposes as the proportion of lime increases or diminishes." "Where vegetable matter abounds, much lime may be usefully added; and on stiff clay lands, after draining, its good effects are very remarkable. Upon *pastures* a greater fineness,

sweetness, closeness, and nutritive character of the grasses is remarkably visible; on *arable lands* a mellowness of stiff soils is produced."

Emerson and Flint in their "Manual of Agriculture" confirm Prof. Liebig in saying that, "lime amends the soil by setting at liberty the potash and other alkalies which exist in combination with clay and in granite sand; that oyster shell lime is of greater value for agricultural purposes than common lime, because it contains a small quantity of phosphoric acid; and no soil, however good, and however favorable the climate will produce first rate crops of wheat unless it contain a proper proportion of lime."

Prof. Nash in his "Progressive Farmer" gives a table of soils, and the one classed fertile without manure, contains a considerable percentage of lime and carbonic acid, while the soil classed barren is nearly destitute of either of these constituents.

Allen, in his "Farm Book," also speaks in the praise of lime as a manurial agent. Bergman found that one of the most fertile soils of Sweden contained thirty per cent. of carbonate of lime. Chaptal analyzed a very productive soil in France which gave near twenty five per cent. of the same and seven of the organic matter. Tillet even found one, and that the most fertile, which yielded 37.5 of carbonate of lime. Some of the best in the Mississippi valley have yielded upon analysis twenty per cent. of lime, and many other soils throughout the United States contain an equal proportion of carbonate of lime, and such are always the last to wear out.

C. D. Wilber, secretary of the Illinois Natural History Society, speaking of lime, says, "The farmer must have it diffused through every acre of his farm or his crops will fail." An article upon lime, in the United States Agricultural Report, 1856, says, "The purposes served by lime as a chemical constituent of the soil are of at least four distinct kinds, namely: First, it supplies a kind of organic food, which appears to be necessary to the healthy growth of all cultivated plants. Secondly, it neutralizes acid substances which are naturally formed in the soil, and decomposes or renders harmless other noxious compounds that are not unfrequently within reach of the roots of plants. Thirdly, it changes the inert vegetable matter in the soil so as gradually to render it useful to vegetation. Fourthly, it causes, facilitates, or enables other useful compounds, both organic and inorganic, to be produced in the soil, or so promotes the decomposition of existing compounds, as to prepare them more speedily for entering into the circulation of plants." Hon. Thomas G. Clemsen, LL.D. in the Report for 1859 writes substantially as above, with regard to the benefit of carbonate of lime.

Here, then, is the testimony of many eminent men direct to the point that lime as it exists in limestone, marble and chalk, is beneficial as a manurial agent. There might also be collected a large amount of testimony from the many that have used lime upon soils, touching the benefits derived from its application. Even an application of plastering taken from old buildings, to the soil, leaves traces of very marked effects produced, years after the application is made.

With all this accumulation of testimony in favor of the beneficial effects of lime, in opposition to the statement of Dr. Nichols, the question very naturally arises, *Who shall decide when doctors disagree?* W. H. Y.

FARMERS' CLUBS IN SUMMER.

During the winter the reports from these associations have occupied considerable space in our columns, and, judging from the many expressions of satisfaction which have come to us through our correspondence, no part of our paper has been more attentively read. Not only this, many of the articles have been copied by the leading agricultural papers of the country, and thus the doings of a Farmer's Club in some corner of our noble State, reported through our columns, is made to interest farmers in remote States, and possibly give hints, the improvement of which may be of great benefit to them. Since November last, the organization of sixty-two Farmers' Clubs has been reported to us.

Now that the long evenings are passed, and the active individual work of members upon their own farms has commenced, we suppose the regular meetings for discussion will be discontinued until another fall. But in the meantime the work of the members for the general good of the Club, and the mutual advantage of its members should not cease. It should, in fact, just commence. Each member should this season undertake some experiment or put in operation some train of investigation or thought for determining some disputed opinion, or more firmly establishing some partially accepted theory—the result of which should be reported to the club at the commencement of its next winter campaign. Bear this in mind; and when you begin your season's labors, plan some experiment for the benefit of the Farmers' Club. Thus, although the meetings for discussion may be suspended during the summer, the period may be one of real work for the Club, inasmuch as the experiments and investigations made are such as cannot be performed in the winter, and will furnish material about which to talk next winter. —*Maine Farmer.*

—A Michigan correspondent of the *Rural New Yorker* has been feeding wheat to his "shotes" with satisfactory results. He is convinced that it is a cheaper food for hogs than corn, at the present prices. He boils the wheat until it is thoroughly cooked, which nearly doubles its bulk.

LETTER FROM THE FARM.

CONCORD, May 6, 1870.

The Season—Wet Weather—Farm Work Retarded—Hot Days and Warm Soil—Appearance of Grass and Grain—Promise of the Fruit Trees—Laying Land to Grass—Witt's Breaker and Leveller—Caterpillars—Bark Lice—Carbolic Acid—Potatoes—New Varieties.

GENTLEMEN:—The long continued wet weather in April has considerably retarded the field work of the farm, this spring. The ground is thoroughly saturated with water, even on the high lands, at this time, while the low lands that were ploughed last fall, or intended to be this spring, cannot be entered upon with the team. The few hot days, however, which have occurred, have so warmed the moist soil, that vegetation has been quick. Grass appears well, but few places in our observation having been winter-killed. Winter rye and wheat seem also to be vigorous and healthy.

All fruit trees promise an abundant blossom; plum and cherry trees were in blossom here in the last days of April. There will be quite a full bloom of the apple and pear trees in this region.

Fields to be sowed to grain and grass never presented a more lively time than at present. All that are drained, or on moderately high land, present scenes of the most lively industry. Every available force is called in. The soil is moist and warm, so that grain will germinate rapidly that is got in during the early part of May.

Having ten acres to be sowed to grain and grass, it was ploughed last fall, with the intention to plough again this spring; this was prevented by the rains, so that instead of the plough, WITT'S "*Breaker and Leveller*" was put upon it. The fields are granite soils, some portions of them being quite heavy, and having many fast and loose stones. Notwithstanding this, the Breaker has so reduced the coarse clod, interwoven with the roots of piper or twitch grass, and so finely levelled and pulverized the soil, that there is a capital seed bed over the whole surface, of from four to six inches in depth. I think there is no other implement which would have performed the same service in the same time. The teeth are lifters, about nine inches long, and are followed by a sort of platform resembling the clapboarding on a house.

Caterpillars, and other insects seem to have flourished through the winter. The nests of the former are growing daily with the growth of foliage on the trees. The scales of the bark louse on the apple trees can only be numbered by millions. Dr. Fitch says they are the bodies of the gravid females, protecting their eggs, which may be found during the winter and spring upon elevating the scales. He says he has counted the eggs, and in some instances found as many as 102 under a single scale, though more frequently from ten to fifty. In my own examinations I have not found so many, rarely more than twelve. The injury which they do to apple and other fruit trees is sometimes very great. When apple trees are infested by them year after year, to a large extent, the trees dwindle away and die. In speaking of the injury done by these lice, Harris says they insert their beaks into the bark or leaves, and draw from the cellular substance the sap that nourishes them.

I have seen only one remedy stated as an absolutely efficient one, and that is fish brine, as stated some weeks since in reply to a correspondent. A gentleman states that this was applied, and destroyed the lice wherever it touched, and without harming foliage or bloom. Enclosed, I send some samples of the limbs they have infested,—the larger piece was cut from the tree in the early part of the winter, the smaller taken off to-day. Nearly every branch of some quite large trees are as thickly studded with scales as these samples are. It is said that a wash of two parts of soft soap, and eight of water, mixed with a little lime, and applied with a brush, will destroy them. Some recommend the use of carbolic acid, but give no formula by which to apply it. This is to be regretted, because this "new thing under the sun," is really working wonders. As a disinfectant it is said to be very efficacious in all contagious, infectious, or epidemic diseases. Mr. Secretary Goodale, of Maine, thinks it safe to "assert that for lice, ticks, and other vermin infesting the farmer's domestic animals, and for their cutaneous diseases, sores, ulcers, and the like, its equal for safety and efficiency has not before been found." I am daily using a soap made by its use, which I will speak of more fully hereafter.

A great change will take place this spring in planting the potato crop. Nearly all the old varieties will be abandoned, and new varie-

ties, some of which have been quite fairly tested, will take their places. Among these will be Bresee's King of the Earlies, Harrison, the Early Rose, Vanderveer, Bresee's Prolific and Peerless, the Climax, Excelsior, Early Prince, Granite State, Calico, &c. In a letter to you from Maine, last winter, I spoke of seeing some 2500 bushels of potatoes in the cellar of Mr. MOSES H. HUSSEY, of North Berwick. I then thought he would scarcely find a market for so many, as they were to be sold for planting only. I now learn from some of the Boston dealers, that the 700 bushels of Early Rose, which I saw, have all been sold, and that Mr. H. is making large purchases of the same variety in Vermont.

This potato has gained for itself several excellent points, viz.: It is early, prolific, does not rot badly, is smooth, the eyes being a very little depressed, and is said to be of excellent quality. I have not tested it sufficiently to come to any conclusion as to its merits. As a vegetable, no other compares with the potato in value. Nearly all the old varieties have become worthless, or greatly depreciated, so that every honest effort to introduce new and good varieties is commendable, and confers a public favor.

The opening spring promises well. With the aid of improved machinery, and larger skill, the farmer may look forward to fair profits in his pleasant employment.

Very truly yours,

SIMON BROWN.

MESSRS. R. P. EATON & Co., BOSTON.

THE AMERICAN IMPROVED SUGAR BEET.

There is certainly something a little wonderful in the climate and soil of Vermont.

A Massachusetts horse is taken to that State, and the Morgans, the Black Hawks, Morrills, &c., are the result. Massachusetts horses go to other States and are heard of no more.

A few flocks of Spanish sheep find their way to the pastures of the Green Mountains, and the "Improved American Merino Sheep" cross the Atlantic and take premiums in competition with the Imperial flocks of the "mother countries."

A few potato seeds are dropped into Vermont soil, and a single tuber pays for a good cow, and a potato fever rages throughout the land.

A single oat springs up in some Vermonter's field, and he reaps sheaves in comparison with which a good-sized man appears,—in the advertisement,—as a pigmy.

The Agricultural Department at Washington sends out, year after year, parcels of seed by the million—or, to be a little more definite, the number for the year 1861 was stated by the Commissioner at 2,474,380,—most of which, undoubtedly, fell by the wayside, into stony ground, thin soil, or weedy fields, and the Department looks in vain for the promised reports of the result of their cultivation. But a few of these little papers of seeds find their way into Vermont soils, and beets come up that beat all other beets,—and hence the "Improved American Sugar Beet."

Some allusion to the good qualities of this variety by Mr. Henry Lane of Cornwall, Vt., in his address at the Dairymen's Convention, at St. Albans, has excited considerable inquiry among farmers, many of whom wish to obtain the seed. Having published an abstract of this address, several applications for further information upon the subject have been made to us, but as we were unable to furnish it, we wrote to Mr. Lane, and received the following note in reply;—

MR. EDITOR:—*Sir*,—Your letter of inquiry of the 4th inst. has been received. The American Improved Imperial Sugar Beet is one of five varieties that I received from the Agricultural Department at Washington eleven years since. They were at that time the best sugar beet that I had ever seen. Good cultivation and a careful selection for seed has changed and improved them in some respects. Considering the source whence I received the seed, I should suppose there would be plenty of this variety in various sections of our country. But I have never seen them, nor has any one that has seen the beets that are grown with us, pretended to have seen this variety anywhere else. It is now cultivated extensively in this vicinity, and has superseded all other varieties of beets, and nearly all others of the root kind. For further particulars I will refer you to my address that will be printed in full in the Transactions of the Vermont Dairymen's Association. That you may judge more correctly of them than from any description I might give, I will send you a few specimens next fall. Yours, respectfully,

Cornwall, Vt., May 7, 1870. HENRY LANE.

NORFOLK FARMERS' CLUB.—At a meeting of this Club, May 9, 1870, the following persons were chosen a committee of arrangements for the next annual fair of the Club. S. E. Fales, A. G. Hills, H. M. Fales, S. T. Rockwood, Cyrus Ware, of Norfolk; J. H. Leland, Walpole; William Fisher, Medfield; Virgil S. Pond, Foxboro'; Erastus Metcalf, Franklin; Willard Clark, Medway; Hiram Ware, Wrentham.—W. H. ROCKWOOD, *Sec.*

ENCOURAGING TO COUNTRY GIRLS.—A committee of the city government of Boston have recently held several meetings to hear arguments in favor of the establishment by the city of a "free market." At a hearing on Wednesday evening of last week, Mrs. Daniels ascribed the alarming increase of vice to the high cost of living, and said "it was an impossibility for a girl to get board in a respectable boarding-house at less than $5 per week, while their wages do not average over $4.50 per week."

A NEAT COTTAGE HOUSE,

WITH PLAN AND GROUNDS.

In consequence of some unforeseen delays in preparing the fourth plan in our series of "Rural Architecture," we present the above, drawn and engraved expressly for us, from a design by Geo. E. Harney, Architect.

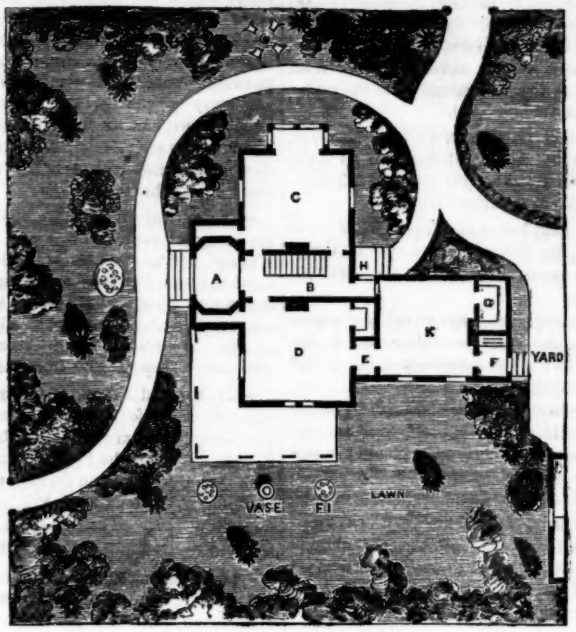
For the execution of this plan, from one-eighth to one-fourth of an acre should be devoted to ornamental purposes; the garden, &c., being in the rear, are not included in this plan. The dwelling should be set back some thirty feet from the highway, and for a good effect it should be on a slightly elevated spot.

A foot-path, five feet wide, starts from the front gate, passes the front entrance, and terminates in the open yard in the rear. This, with the carriage road, which leads from the gate to the stable, is the only path we have introduced on the plan.

The foundation of the ornamental portion is a smooth, green lawn, extending to the boundaries on either side, which are hidden by plantations of evergreens and shrubbery, with occasionally a deciduous tree introduced to produce a variety, and give character to the whole. They are mostly arranged in irregular clumps, connected together by other shrubs and evergreens, and planted with a view to obtain as great a diversity of outline as possible, and heavy masses of foliage and flowers, from spring to late in the fall. The clump on the right of the front gate is composed principally of tall growing shrubs and evergreens. In the corner is an American mountain ash, the color of whose red berries contrasts well with the heavy green of the two Norway Spruces, one on each side of it. Close to the path is a large, flowering Syringa, and in front some low, bright flowering shrub, such as Rose Weigela, Double Tree Peony or Double Dwarf Almond, while farther back, near the fence, are a tall Purple Lilac and a Tartarean Honeysuckle.

But without specifying further the exact position or kinds of shrubs, trees, flowers, &c., we will leave that to the taste and means of the proprietor of the house and grounds.

The house itself is an example of the simplest rural gothic style. It is one and a half



stories in height, and contains three finished rooms below and three chambers on the second floor.

The vestibule, A, is approached from the terrace through the pointed arch and measures eight feet by nine. The hall, B, is seven feet wide and fifteen feet long, and contains stairs to chambers and cellar. C is the parlor, measuring fourteen by fifteen, the principal feature of which is the bay window on the side opposite the door, overlooking the small flower-beds and the side street. The dining or living-room, D, measures also fourteen by fifteen; it connects with the veranda by a mullioned window reaching to the floor and opening like the French window. A closet is provided at the side of the vestibule in the front gable and for china, &c., at the other end of the room, furnished with shelves and drawers. The passage, E, which is also fitted with shelves, communicates directly with the kitchen, K. This room is thirteen feet square, and is well lighted by two windows. At the left of the chimney a door opens into a large store room, G, and at the right another leads to the pantry, F. We here have a sink and pump, with a closet and shelves for tin ware. A door opens directly into the yard.

On the second floor, the two principal chambers measure each twelve by fourteen, and the other, in the gable, ten by thirteen.

Prices and quality of materials vary so greatly that no exact statement of cost of building can be given. It might vary from $1800 to $2500 according to locality, and cost of lumber and labor.

To Destroy the Cucumber Bug.—A correspondent writes to the Maryland *Farmer*:—"I send you an item, if you think it worth publishing, which effectually protected my melon, squash, cucumber and other vines from that destructive pest, the 'striped or cucumber bug,' the past season, with only one application, viz.: a strong solution of hen-house manure—say one peck of the manure to one and a half gallons water—let it stand twenty-four hours, and sprinkle the plants freely with it after sunset. The above was suggested to me by a negro woman living on my place, who has some practical experience in gardening, and says she has used it for years, and has never known the first application to fail to drive them off, and they never return."

AGRICULTURAL ITEMS.

—D. F. Appleton, of Ipswich, a breeder of the Kerry cattle has recently received some choice cows from the Island of Jersey.

—Cabbage seed should never be grown from stumps, but from a sprout issuing from the center of a perfectly developed head.

—It is said that Dartmouth College, Hanover, N. H., has received nearly $100,000 for its Agricultural School. It has bought a farm of 200 acres. There are seven in the agricultural class.

—In a paper read before the Central New York Farmers' Club, Mr. Robert Gibson said he would name the Globe mangel wurtzel as the best root for all purposes.

The *Utica Herald* gives a list of 145 new cheese factories to go into operation this spring in the State of New York, and understands this is far from being a complete list.

—The South Bend, Ind., *Register* says: "Thomas Rockhill, of this place—himself over seventy years of age—is doing his corn ploughing this spring with a span of horses, one of which is twenty-six and the other twenty-seven years old."

—The Lee *Gleaner* says that W. S. Clark, President of the Massachusetts Agricultural College at Amherst, has been engaged to deliver the address at the next annual fair of the Housatonic Agricultural Society in September.

—The increase in the manufacture of beet sugar in Europe for the present year over that of last year, is about 100,000 tons. The product already exceeds that of Cuban sugar cane. France exported 70,000 tons of beet sugar during 1869.

—The Sheboygan, Wis., *Times*, says that the farmers of Calumet county, are preparing to grow hops quite extensively, although hop-raising has not been very profitable of late; some owners are enlarging their yards and seem resolved to make or break in the business.

—Somebody says the reason why there is a greater yield of butter when the whole milk is churned, rather than the cream, is that there is a great deal more caseine incorporated with it. When such butter is fresh, the taste is very agreeable, but it will not keep. Is this so?

—A pig about five months old was discovered sucking a cow on the farm of Alex. B. Ramsey, in Clark Co., Kentucky. He watched it afterward for several days and found it in the same performance. The pig would rear up, placing its fore feet against the hind legs of the cow, and would remain in that position until it had satisfied itself.

—There seems to be a great difference in soils with respect to the influence of lime upon them. According to the report of the Trustees of the Pennsylvania Agricultural College, liming on the eastern and central farms was without benefit, while on the western ones a liberal application increased the corn crop nearly one-half. The presumption is that in the first instance the soil needed something else, while in the second, lime was precisely what was wanted to impart vigor to it.

—Thunder sours milk and kills oysters. You may load a vessel to its utmost capacity, start for market, and one good round clap of thunder will kill every oyster in the vessel immediately. Pounding with an ax upon the deck of a vessel when oysters are thereon, or pounding upon the sides of a vessel with a heavy weight, will kill every oyster that feels the jar.

—The Agricultural College at Hanover, N. H., has been presented with a plough made by Daniel Webster, and used on his Marshfield estate. It is about thirteen feet long and weighs a little less than a ton. From what Horace Greeley "knows about farming," we think he should have had that plough. We fear the New Hampshire farmers will hardly keep its irons from rusting.

—Mr. Richard Peters, of Georgia, informs the editor of the *Ohio Farmer* that neither Devon or Short-horn cattle are healthy in that section. Mr. P. finds a cross of the Brahmin stock from India, with the Alderneys and Devons are healthy and profitable. The long wool English sheep he also finds do not succeed as well there as the Merino, and he will keep none but the Merino.

—After working eight years and expending some $40,000 in time and money, Mr. S. D. Carpenter, of Madison, Wis., has perfected his "Automatic Binder," which is designed to rake and bind the grain and carry the bundles until enough are bound to form a shock. The editor of the *Western Farmer* has not seen the machine in its present state, but is informed that it operates in the most perfect manner.

—According to the Secretary's statistics, the twenty-nine agricultural societies of Massachusetts, received in 1869, $16,934 from the State treasury, and paid $30,734 in premiums to 5,666 persons. These societies owe $110,761, and value their real and personal property at $466,352, besides permanent funds amounting to $272,226. Premiums to the amount of 19,319 were offered for live stock, of which $9,261 were for horses. Total amount paid for "farm products," $5,989.

—Cyrus Smith, one of the old farmers of Victory, Vt., till recently, never owned a hen. Dogs, cats and poultry, he always regarded as nuisances about a farm. He married a young wife a few months ago who had the hen fever, and persuaded the old gentleman to invest. He has a handsome flock of hens now, and his neighbors do say that when he starts for the barn to hunt eggs, he carries with him the zeal and pride of a boy who has just arrived at the egg-hunting age.

—A correspondent of the *Ohio Farmer* has practiced shallow planting of corn to avoid the cutworm for more than twenty years. He says, cutworms always burrow in the hill around the stalk, previous to cutting it off. Shallow covering gives

them no chance to burrow, and if they should, the sun will soon drive them from their place. They universally select their position in the daytime and commit their depredations at night. In shallow covering the seed gets warm and starts much quicker than when covered deep.

—The *Homestead* says that very little, if any money, has been made this season by the cattle feeders of the Connecticut Valley, and some have lost money in the business. If tobacco was as low as other farm crops, feeding cattle would be a poor business, but most feeders expect to more than make up on their tobacco what they lose fattening cattle. Those that have fed sheep are a great deal better suited with what they have done than the cattle men. The price has nearly doubled since last fall, and a fair profit has been realized.

—In speaking of the arrival of six thoroughbred pedigree animals recently bought of H. G. White, Framingham, Mass., by Mr. Levi A. Dow, of Waterville, and Charles Shaw, of Dexter, the *Maine Farmer* says, "we have never known a time in the agricultural history of our State, when her farmers and breeders were showing so much activity and intelligence in carrying forward their operations as at present. We have in Maine gentlemen of character, intelligence and wealth who are engaged in breeding thoroughbred animals of all the types now held in esteem for the various purposes,—Devons, Herefords, Short-horns, Jerseys, Ayrshires."

—An exchange says a Pennsylvania merchant agreed to take a farmer's oats at forty cents a bushel if the latter would let him tramp the measures when filled. The farmer agreed to it. The buyer paid for sixty bushels and next day went after them. The farmer filled the bushel, and the merchant got in and tramped them down; whereupon the farmer poured the oats so compressed into the bag. The merchant protested, and demanded that the measure should be filled up after tramping. The farmer informed him that there was no agreement of that sort, but that he might tramp down the oats to his heart's content after they were measured.

—A farmer named Chilson, living near Girard, Ohio, thinking to rid his cornfield of a troublesome ground hog, managed to administer to the quadruped a dose of strychnine which killed him nearly instantly. The carcass was suspended to a tree, where the crows soon espied the savory bit, and proceeded to appease their appetites. After partaking of the meal, the crows would fly a short distance, as if in agony, and fall dead to the ground. The bones, being thoroughly stripped of the flesh, remained exposed to the bleaching influence of sunshine, rain and frost for nearly two years, when, falling to the ground, a highly-prized dog masticated parts of them, and died ten minutes afterward. We copy the above to show the danger of using this poison.

NEW PUBLICATIONS.

HARRIS ON THE PIG. Breeding, Rearing, Management and Improvement. By Joseph Harris, Moreton Farm, Rochester, N. Y. Illustrated. New York: O. Judd & Co. Boston: Crosby & Damrell, 100 Washington St. 1870. 12mo, 250 pages. Price $1.50.

"A farmer's son, and myself a farmer, all my sympathies are with the farming class, rather than with the consumers," is one of the prefatory sentences of this volume. When all our agricultural books are written, and all our agricultural papers are edited by men who can truthfully make that remark of themselves, book and paper farming will be more popular than at present. By his contributions to agricultural papers during the past twenty years, Mr. Harris has given the farmers of this country opportunity not only to form an opinion of his ability as a writer, but of his success as a farmer. He is an earnest advocate of high farming and choice stock. Still he says "the introduction of better breeds of pigs will in itself do little towards improving our farms; but the farmer who once uses a thoroughbred boar and adopts a liberal system of feeding, will find that he can produce better pork at a far less cost than when he uses a common boar; and he will be likely to study the principles of breeding with an interest he has never felt before. The introduction of a thoroughbred boar will lead to the introduction of a thoroughbred ram and a thoroughbred bull of a good breed, and this in conjunction with cleaner culture and a more liberal feeding is all that is needed to give us better and cheaper meat; and at the same time we shall make more and richer manure, and be enabled to grow larger and far more profitable crops of grain."

Of the different breeds of pigs in the United States, he says he knows of none of them that possesses the smallness of offal, perfection of form, early maturity and fattening qualities of the Yorkshire, Essex, or Berkshire. The Chester County Whites he calls a capital sort of *common* swine. But we must content ourselves with marking portions of the volume for future use, and calling the attention of those interested in pig-raising to "Harris on the Pig."

THE GENTLEMAN'S STABLE GUIDE: containing a familiar description of the American Stable; the most approved Method of Feeding, Grooming, and General Management of Horses; together with Directions for the Care of Carriages, Harness, &c. By Robert McClure, M. D., V. S., Author of "Diseases in the American Stable, Field, and Farmyard." Philadelphia: Porter & Coates. Boston: Lee & Shepard. 1870. 12mo., 184 pages.

The name of the author and the title-page in full are a sufficient indication of the contents of this book. Dr. McClure needs no endorsement from us, and his books need none of our recommendation. This volume will aid us in answering some of the many questions which are asked in relation to the construction and management of stables. On another page we give an extract from Dr. McClure's remarks on the floors of stables, which is a good answer to the inquiry of "E. T." in the last FARMER about concrete floors for horse sta-

bles, with which we have never had any experience ourselves.

EXAMINATION OF SOILS.—Prof. C. B. Chapman suggests in the *Western Farmer* the following experiment with soils for the purpose of determining more exactly than can be done by examination, the proportion of sand, clay, &c., which they contain. Put some of the soil into a dish containing a sufficient quantity of water to allow the particles to move freely when stirred. After being well stirred, allow it to settle quietly. The heavier sand will form a strata at the bottom, while the lighter clay will form a strata upon the top of it. The water may be turned off after it has become clear. These layers of sand and clay may then be examined to ascertain the comparative thickness of the two strata. This will furnish much information with regard to the relative proportion of the sand to the clay which had existed in the original homogeneous mass of loam. The experiment may be rendered still more accurate by the careful separation of the clay from the sand; then drying them and ascertaining the comparative weight of each.

For the New England Farmer.

RAISING TURKEYS.

I saw in your paper a request that some one would inform the writer how to raise *young* turkeys. As I have had years of experience and have been very successful, I will give your readers two methods of raising turkeys, by way of contrast.

I have known many young people, and some that were not so young, to embark in the enterprise in a very cheap way. They would buy one or two small late turkeys, such as they could obtain cheap, and with an expenditure of one or two dollars at most, commence operations. In the spring their turkeys would lay a good number of eggs, and the owner would think they were doing nicely. But such hens always hatch out small, weak young turkeys, and with the best of care it is very difficult to make them live. They are often fed as soon as they are out of the shell, and the mother is either tied with a string to her leg, or placed in a small low coop which is allowed to remain in the same place for days and even weeks, and as her brood is diminished in number, the anxious inquiry is made, What is the matter? This is no exaggeration. I have seen many persons go on in just this way and worse.

I always make the best possible selection of those to winter over from a large flock of turkeys, choosing carefully only the largest and best, and if at any time I find those that are better than mine, I purchase at once, without regard to cost. I keep the Bronze turkeys—they are larger and more hardy that any other variety that I have ever raised. By the middle of March or first of April, I begin to feed well, and make nests in different places in the barn and sheds, and put in a hen's egg, at the same time scattering a little corn around these places to get their attention. Thus they may generally be induced to lay in these nests from choice, and much time and trouble is saved in finding their nests. These nests should be suitable for them to sit as well as to lay in. They should have a board of not less than a foot in height around them, to prevent the young turkeys from crawling away as soon as hatched. The eggs should be removed as fast as laid, leaving the hen's egg in the nest.

After the turkey shows signs of wanting to set, I put in the nest from 18 to 22 eggs, according to the size of the turkey. If I don't have turkey's eggs enough I put in, in just one week, a few hen's eggs. I have often had a turkey bring up a mixed brood and do well. When they are hatching, I do not go near the nest, except sometimes to remove the shells, till the young are from 24 to 48 hours old. I then prepare a coop of good size, with open places through which the young turkeys can run out when they choose, and put the turkey and her brood into it.

I then take some wheat bread, soak it in milk, and scatter small pieces inside and just outside, and continue to do so occasionally until they eat, which they will soon learn to do. They require but little for a few days, but want it often, and of the best quality. As they grow older, they can be fed with curd, boiled potatoes, dough, and after they get a start, with almost anything. The coop should be moved every day. This is important, and should not be forgotten. It is a good plan to have a place of shelter for them nights. See that they are in their place every night in good season. They are creatures of habit, and will soon learn to come of their own accord, and save a great many steps in running after them, besides being out of the way of foxes and skunks, which often destroy whole flocks at night. A FARMER'S WIFE.

Hyde Park, Vt., April, 1870.

DISCUSSION ON HAYING.

We make the following extract from a report in the *Maine Farmer* of a discussion on the Hay Crop by the Farmers' Club of Levant, Me:—

Mr. J. West, Secretary, says early cut and well cured clover hay is undoubtedly superior to all other kinds. The Vermont clover is preferable to the Northern or large variety, as it matures earlier and makes finer and better hay. This locality, however, is not adapted to the extensive cultivation of clover. The yellow weed and white weed should be cut first, and then the other varieties in the order of their maturity. Is in favor of cutting early; cut one year after the seed had formed and the result was the rats and mice injured it very

badly in the mow. Milch cows fed on early cut hay, give more and richer milk, and the butter comes without trouble. Cures in the old way, but thinks there is as much danger of drying too much as too little. Hay hurts quicker from external moisture than from its own juices. Does not believe in salting hay—it is a positive injury.

Mr. G. W. Smith said, hay is already a special crop, but it is not admissable to raise it exclusively. Disapproves the practice of mowing until it exhausts the land. Would not mow land longer than it produced a good crop. It is more profitable to raise two tons upon one acre, than the same amount on two acres. Recommends early cutting. We get less in weight, but it is more valuable for stock. It is not possible to cure early cut hay sufficiently in one day to save. Clover should be made in the cock as much as possible, thereby saving the leaves, which are the most valuable part.

Mr. B. Boston said, hay is our main dependence. Late cut hay is almost worthless. Began haying last year before there were any blossoms, and never had better hay; would rather have one-half ton of early cut hay than a ton cut after the seed is made. Cuts clover when two-thirds in blossom; puts up and lets stand in cock over one day, using caps. Meadow hay requires more drying than any other kind. Most farmers cut their meadows too late. Does not believe in hauling in green grass. Referred to the statement of Mr. J. R. Macomber in Bangor *Jeffersonian* detailing his experience, and recommending the new method of curing hay. He (Mr. Boston) had been informed that a committee appointed by the Glenburn Farmers' Club to examine Mr. Macomber's hay, reported it to be black and smoky unfit for market, and nearly worthless to feed to stock.

Mr. S. Y. Luce recommends the use of plaster, and top-dressing with manure. Had learned by experience that hay cut in the blossom is enough better than that cut after the seed has formed, to pay for cutting. Can dry his hay in two days of good weather sufficient to keep; would not dry too much; if necessary to get in green would mix old hay or straw with it.

Mr. E. Clements said, grass should not be cut while the dew is on it. He rakes and puts up his hay while it is hot, opens and gets it in the next day. Put his hay in last year in a greener state than usual. It came out smoky. Thinks it is not practicable to get in the same day it is cut.

Mr. D. Gilman believed in a mixed husbandry, but considered hay the most important crop to cultivate as a specialty. Since the market for potatoes is overstocked and the prospect so poor, the hay crop is the most promising one we can raise. Hay has been worth in Bangor market $18 per ton at some time in the year for several years past, and is worth nearly that for stock. He agreed with others as to early cutting, but thought the proper time depended very much upon the season. One year his grass grew nearly one-half after he began haying. There is as much loss in beginning too early as too late.

EXTRACTS AND REPLIES.

OYSTER SHELLS IN AN ORCHARD.

S. Fletcher,—*Dear Sir:*—I have lately taken up one of the one hundred and twenty apple trees that you set out twenty years ago this spring on this place. In doing so I found a quantity of oyster shells about the roots. Some of these shells are but very slightly if at all decomposed. Presuming that you put them there at the time of setting the trees, I wish to inquire your object in doing so, and whether you think they have been of any benefit to the trees, or to the soil.

Winchester, Mass., May 3, 1870. Eli Cooper.

Remarks.—Oyster shells are composed mostly of carbonate of lime. And as the beneficial effects of this material on the soil of New England is a question on which the doctors disagree, perhaps it may be proper to publish the above inquiry, though probably intended as a personal question.

While hauling some ashes from the village to be used as a compost for this orchard, which was set out in the spring of 1850, a pile of oyster shells and other rubbish in a back yard was offered on condition that I would take it away. As individuals in whose judgment I relied, said they thought it might help the trees, I applied several loads to the orchard. The shells which were on or near the surface soon crumbled and disappeared. For some eight or ten years the trees grew as well as any I ever saw. But a few years before you bought the farm, this orchard, in common with orchards generally in the vicinity, gave evidence that something was the matter with the trees. Old orchards ceased bearing, and young ones did not begin. I do not think the few shells applied did any harm; nor am I sure they did much good. I experimented with ordinary lime on different crops, but without being able to see any result, either good or bad. My opinion is that both oyster shells and ordinary lime are pretty slim "manure" in New England, however useful they may be at the South or in old England, where an occasional liming is considered essential in high farming. The opinion expressed in the Farmer some time since by Dr. Nichols, that carbonate of lime, whether in the form of oyster shells or chips of marble, is worthless, is controverted by a correspondent on page 320 of this issue. S. F.

DUSTY HAY.

Can you or some of your subscribers give me a little light on this subject? Last summer I filled my barn with hay and cured it in the usual manner; the most of it was cured without being wet. I kept the windows open in both gable ends, and the great doors, also, until cold weather. When I commenced to use it in December it was dusty, and has continued to grow worse and worse through

the winter. It is just about as bad in the middle of the mow as it was on the top. Sometimes I throw down a couple of hundred and shake it up to get the dust out, and it fills the barn full; the floor of the high beams is covered with dust.

I have a cellar under the barn where I keep all my manure, that is open on the south side. The leanto runs the whole length of the north side of the barn and it has been full of cattle all winter. Can you or any of your subscribers told me what makes the hay so dusty, and what I can do to prevent its being so next winter? G. B. H., JR.

Shrewsbury, Mass., April 30, 1870.

REMARKS.—We can think of no reason for the dust in the hay, except that of raking it up with an iron-tooth rake. On light, dry lands, the use of the horse rake scratches the surface and causes a good deal of dust to rise. If your land is not of this character, and you did not use an iron-tooth rake, we are at a loss to know what caused the dust. The inquiry is an important one and deserves investigation. We shall be glad of more information in particulars. Was your hay put into the barn without sufficient drying?

CORN, WHERE BUILDINGS WERE REMOVED.

I wish to inquire through the FARMER what I can do on a piece of land where I have removed some old buildings,—two barns and a house? I removed them in the winter of 1869. Last summer I planted the land where the buildings stood with corn, which came up nicely, and grew some, then it died or remained very small. Before planting I removed all of the manure, and some four to six inches of the dirt. Now what can I put on that land to make it fertile, or must I take off some more of the soil? A. H. DAVIS.

Marshfield, Vt., April, 1870.

REMARKS.—The want of growth, it seems to us, may be imputed to the poorness of the ground after four to six inches of the soil was removed. The wife of the editor who is sitting by, and who listened to the reading of the above letter, says, "refer the gentleman to the sixth verse of the thirteenth chapter of Matthew, for the reason why his corn did not grow."

PREPARATION OF BONES WITH VITRIOL.

Please inform me through the columns of your valuable paper how to use oil of vitriol in the preparation of bones to be used as a fertilizer this spring.

REMARKS.—Without a mill to grind bones fine we are inclined to the opinion that it is not advisable for farmers to meddle with vitriol. See, however, Monthly FARMER, 1869, pages 290 and 338.

STRAWBERRIES AND RASPBERRIES.

Having cultivated small fruits for market for the last ten years, I feel called upon to say, after reading the statements of Mr. J. Fleming in the FARMER, of April 16, that he must have been very unlucky if he does not get a paying crop of strawberries more than two years out of five. Of course some years are more favorable than others; but I have never found the year that they did not pay as a market fruit. But certainly, I should not depend upon the Jenny Lind and Triomphe de Gand. The latter is not a paying variety and the former only for a few early berries. I have tried nearly one hundred varieties, reserving the most profitable and ploughing under the balance. I would give you my experience in the varieties, but fear I should occupy too much space; but should any one care to know what I have cultivated, and what I do now cultivate, I will inform them cheerfully. And as to getting fifty-two quarts of raspberries from forty-eight plants I think it rather small. My plants give me four to six quarts each, and sometimes more, and sell at from thirty to fifty cents per quart. If new beginners will get the best varieties, and give good cultivation they will find both strawberries and raspberries will pay. MARION FRUIT GARDENS.

Marion, Mass., April, 1870.

MUCK ON THE FARM.

I see that Mr. O. J. Upham is out against muck. I cannot find it in my heart to believe that he wishes his remarks to have any influence on the mind of any man against muck on land, but I am led to think that he is a drummer for some patent manure merchant. Farmers here all know that most muck as it is dug from the pit is like any other unfermented vegetable matter, but when it is thrown out and exposed to the air, frost and heat of the sun, and is well rotted, it possesses every ingredient necessary for vegetation. But muck from some swamps that are always drained needs only to be shoveled out and carted and spread on to the land. If Mr. Upham will come to my place I will clear all the fog off his brain by showing him land that will yield one and a half tons to the acre now, that did not give five hundred two years ago, and prove to him that the increased crop is owing to top dressings of muck right from the meadow, or I will back down and pay his fare. Come from the 20th to the 25th of July, and he may not have to use guess work any longer. I mean what I say, and say what I know.

Brookfield, Vt., April, 1870. V. BAKER.

SUPPOSED CASE OF HORN-AIL.

Last summer I had a very sick cow. She gave very little milk, breathed very heavy, and discharged at the nose. The neighbors called it horn ail, and thought she would die. I took about a large spoonful of ground mustard and half a pint of vinegar and turned it into her ears warm. She blowed the worst stuff out of her nose I ever saw. I continued the operation every day or two for a week, giving her night and morning, three large heaping spoonfuls of Schovill's condition powders, put in a bottle of warm water and turned down her throat. She was kept in the barn nights and came out all right. Every morning she sweat like a horse. Whether the powders, or the vinegar and mustard, or nature itself did the cure I can't say.

Fairfax, Vt., April 28, 1870. N.

ERADICATING SWEET FLAG.

Some months since, some one asked in the FARMER how to kill out sweet flag. If the ground is dry enough for a team to walk, plough the ground. Once ploughing, which need not be very hard for a team, will nearly if not quite kill it. If too soft for a team, spade it over, and with a little hoeing the work is done.

HENRY A. JENCKES.

Newport, N. H., April 18, 1870.

MR. BUTTOLPH'S BARN.—THE SPRING IN WASHINGTON COUNTY, VT.

I like the plan of Mr. Buttolph's barn in FARMER of April 30, very much, except that the stables and feeding passages are too narrow by at

least two feet each, and the manure cellar should be ten feet in the clear.

It has been very dry here thus far this spring, and if we don't have rain soon the hay crop must be short. Farmers are getting along finely with their spring work. Very good feed now in pastures; last year at this time it had scarcely started. S. R. HUSE.

Waterbury, Vt., May 7, 1870.

SOWED CORN FOR WINTER FEED.

I have sowed corn for several years to feed to my cows in the fall, and am satisfied that it "*pays*." This year I think of sowing an acre for winter feed, but know nothing about the time of sowing, curing, &c.

Will you please tell me the best variety to sow; the time and manner of sowing; the time of cutting, and the best method of curing? G. H. S.

Belchertown, Mass., May 15, 1870.

REMARKS.—Corn for fodder is usually sown in drills, from three to seven feet apart, and the seed scattered therein at the rate of thirty or forty grains to a foot, or three or four bushels per acre. It is often planted or sown at different times, to secure a succession of fodder, from early in the spring till the middle or last of June. Although the large Southern or Western corn is much used, sweet corn is generally preferred. Our intelligent correspondent, "N. S. T.," has some valuable hints on the subject at page 313, Monthly FARMER, 1868. He favors a less liberal seeding than is usually practiced, for the purpose of a more perfect maturity of the plant, and recommends only twelve kernels to the foot, with rows two and a half feet apart, and also the use of the smaller and earlier varieties of corn. The immature growth obtained from Western and Southern corn, though large in bulk, is inferior in quality. He says, "during the early stages of growth, its cellular tissue is imperfectly developed, and the juices are thin and watery. As the stalks approach full development, the juices thicken and become richer in saccharine matter, the goodness of the stalk is absorbed rapidly by the ears, which if undisturbed would take up from the stalk nearly all that is valuable for nutrition. The stalk, then, has its greatest value for fodder while the ear is forming." Curing for winter use is the most difficult part of the process. After being cut and well wilted, bind it in small bundles and put it into large shocks, and if put up neatly and the top snugly bound, it will keep until late in the fall; but even then it will not be dried enough to be put in large heaps in the barn. Sometimes the bundles are put astride poles, or laid up in such a manner that the air will circulate through the mass.

Ordinary cultivation may produce a fair crop, but only good land, plenty of manure, and high culture will secure the best success. Let us know how you succeed in growing and curing the product of your acre.

A correspondent of the *N. W. Farmer* says that he has tried thick and thin seeding, and prefers about 40 kernels to the foot. The finer growth from thick seeding produces more weight of fodder, and cattle eat it cleaner, but it is more difficult to cure. With a little practice the seed may be strewn in the furrows as fast as one can walk. The corn may be covered by a cultivator run either across or lengthwise of the rows. Some of the seed sowers might be so adjusted as to drop the seed sufficiently near together.

VALUE OF GROUND BONE.

Mr. Joseph Harris, of Rochester, remarks in the *Country Gentleman*, "The fertilizing value of nitrogen and phosphoric acid depends very much upon its condition. Nitrogen in the form of nitric acid or ammonia, or in compounds such as urea, which readily decompose and form ammonia, is worth (at the present prices of Peruvian Guano) 20 cents a pound. But when nitrogen exists in substances that decompose slowly, it is, of course, not so valuable. Hair, hide, horn and wool contain more nitrogen than the best Peruvian Guano; but no farmer could afford to pay as much per ton for them, because it takes a long time for them to decompose. And so it is with bones. We would rather pay 20 cents a pound for nitrogen in dried blood, urea, or guano, than 10 cents in coarse bone dust. And the same remarks will apply to phosphoric acid. Soluble phosphoric acid is worth 15 cents per pound, while that which is locked up in insoluble combinations is not worth more than five cents. Pure bone dust contains—

4 lbs nitrogen, worth say 10 cents	40
Phosphoric acid 22 lbs, at 5 cents, worth	$1.10
	$1.50

This is all there is of material value in bones. They are worth more or less, according to their fineness and consequent availability.

If ground *very* fine we should estimate them as follows:—

4 lbs nitrogen, at 15 cents,	60
22 lbs phosphoric acid, at 7 cents,	1.54
	$2.14

Concord, Mass., May, 1870. R.

CUTTING AND CURING HAY FOR ITS VALUABLE QUALITIES.

The great crop of New England—the hay crop—is almost ready to harvest. Four weeks, at most, and much hay should be in the barns.

Upon our rough farms where the scythes must do the most of the cutting we are obliged to cut some out of season. Which shall we cut first? Last June we cut about two tons of meadow or or swamp coarse, wild grass. The quality of the hay was much better than the same grass would have made if it had stood until August. We wanted hay to make milk and beef. Though the meadow hay was eaten without waste we do not think it was worth the cost of cutting at that time. We thought the best of our hay was worth the highest market price more than the swamp hay. If that opinion was correct, the swamp hay was worth nothing to feed to our cows, provided we could buy the best quality.

Which grass will give the best color to butter? Will a hot sun drive the color out of the hay? What kind of grass will retain the coloring properties best during the drying process? We believe as much butter can be made from hay in winter as from grass in summer. We believe that it is easier to obtain the quality than the color we desire.

If you, Messrs. Editors, or some one at the head of an agricultural college, will tell us how to preserve the valuable properties of grass in a dried state, we will ever be your debtor. Our own ex-

perience has taught us that there is a right time to cut hay, but it has not told us just when that time is. That experience has taught us that the quantity and quality of the butter is much changed by the curing process, but has not told us how to cure grass to obtain the most desirable results. Fearing we may never learn it on our own farm, we ask for information. F.

Mast Yard, N. H., May 17, 1870.

GARGET.

I have an extra ten-year old cow which I value very highly both as a stock cow and milker. She is farrow this year, and is gargety, frequently giving stringy milk, accompanied with swelling of the udder. I can keep it down by giving a spoonful of saltpetre every day. But as soon as I omit giving it for two or three days, the disease will return. Can the cow be cured, and if so, how?

West Concord, Vt., May 16, 1870. H. C. W.

REMARKS.—Twenty grains of Iodide of Potash, given three times a day in drink, often prove beneficial, as well as saltpetre. Mr. W. B. Brigham, of Roxbury, Vt., stated in the FARMER over a year ago that a mess of about half a pint of beans given twice a day was the best remedy he ever used for the garget. He said they might be given either dry or green. If green, a few hills of the vines and beans may be given. The cow will eat them greedily. To be sure, this is no "great thing," and its simplicity may lead to doubts of its efficacy. But Mr. Brigham stated that he had used it for several years, and that it had never failed with him. Others had tried it with the same result.

EARLY CUT HAY.

As the time will soon arrive for cutting hay,—if we cut it when it should be cut, which with many of us is a little too soon for the completion of all such work as shearing sheep, hoeing and many other things, which keep us too long from the hay field,—I thought I would write a few lines of my experience with early and late cut hay; hoping thereby to do some good by inducing some one to cut his hay earlier. I have commenced for the last few years from the 20th to 25th of June, and finish by the middle of July, if I can; when formerly I commenced after the 4th of July and finished in August.

I can keep more stock from one acre of early cut hay than I can from an acre of late cut, and keep it better, and I think it does not injure the ground as much; and then I have a crop of rowen or good fall feed. I feed my sheep nothing but good early cut hay, and they usually look better in the spring than when they come to the barn in the fall, and eat their hay all up clean. When I fed late cut hay I could not make them eat it clean, and they came out in the spring poor.

When I first began to cut my hay so early, people would come along and ask me if my grass was fully grown, in a tone and manner that indicated that they thought that I had commenced haying quite too early. But after careful observation I am satisfied that few farmers in this section lose much by cutting hay too early. On nearly all farms there are some pieces newly seeded to clover or which have run into June grass, that are almost worthless, if allowed to get ripe, but which make good hay if cut at the right time. Such pieces will do to commence on, while the later portions are growing. But even allowing that there is some loss in that first cut, I think we had better begin before it is all grown, than to wait till the last spear gets grown before we begin, and then have the last get so ripe that we lose more at the last end than we do at the first. I may say something about feeding at some future time.

C. F. LINCOLN.

Woodstock, Vt., May 16, 1870.

FATTENING TURKEYS.

TO A FARMER'S WIFE:—*Madam*,—Having read with pleasure in the NEW ENGLAND FARMER of May 7th, your article upon raising turkeys, I concluded you could give valuable information to me and the public about fattening them. Last year I raised a few for the amusement of my children, for the first time in my life, but I did not succeed in getting them fat for the table. Whether they were too young to fatten, or what the difficulty was, I know not. Will you either write me or publish an article in the FARMER, and let me know when it will appear in the paper, as I do not take that paper regularly, giving the best mode of fattening turkeys and the age at which it can be done most successfully. With the anticipation of again deriving pleasure from your plain, direct, sensible style, I am with much respect, your obedient servant, THEODORE OTIS.

Wellesley, Mass., May 14, 1870.

BEST FERTILIZERS AND IMPLEMENTS.—SICK COWS.

Will the editor of the FARMER, or some experienced farmers, please answer two or three questions for one who has just commenced farming and oblige him, and perhaps others?

Let me quote a few lines from a late number of the NEW ENGLAND FARMER, which will serve to introduce one subject:—"The compounds put off upon the farmers as fertilizers have proved of so little value that hundreds are discouraged from using anything in the form of compact manures."

How, then, shall we who have little money to risk in experimenting, determine what manures to purchase? Shall we buy Bone Meal, Coe's, Bradley's or Fales' fertilizer? Who can tell us of the operation of the last? We read of failures because the right *kind* of manure, the kind needed in the soil, was not used. Why not have a "Prof. of Soils" in our Agricultural College, to whom we may send samples from our different fields to ascertain what *is* needed? Will not others give us results of experiments with different fertilizers?

Two or three years since, much was said about Horse-hoes, warranted to do the work of six or eight men. Does the invention prove to be valuable? Does Holbrook's do the work of the common hoe?

A new, more simple and less costly Horse-rake was mentioned some weeks ago, with the promise that we should hear more of it. I think it was made in Maine. Is there really much difference in horse-rakes?

Is there danger of feeding cows too plentifully for a few weeks before coming in? I have heard of several cows in good condition, and so far as known, in perfect health at the time of calving, that soon became too weak to stand, and finally died. Can any one explain the difficulty or give a remedy? NO SIGNATURE.

Townsend, Mass., May 10, 1870.

REMARKS.—"Ask of the learned the way? The learned are blind; one bids us seek, the other shun mankind," is as near as we can remember one of Mr. Pope's rhymes. And there appears to be just about the same diversity of opinion among farmers as to fertilizers, implements, &c. After all, each individual must act on his own judgment.

This is one of the laws of our being. Each one must do his own thinking and his own choosing. Editors or agricultural colleges cannot relieve him of this labor and responsibility. The experience of others may furnish hints, but not rules for us. The Almighty might have saved us the responsibility of our manhood. In every emergency, our duty might have been written on the blue arch, or on the intervening cloud, but it is not, and never will be.

At the request of the writer of the foregoing inquiries, we withhold the initials of his name, though we think the request an unwise one.

HORSE-TAIL—*Equisetum arvense.*

The inquiry of our correspondent who enclosed a specimen of a plant which he finds in his hay is answered by W. S. Clark, Esq., President of the Massachusetts Agricultural College, to whom it was forwarded, as follows:—"The plant enclosed in your favor of the 18th instant is *Equisetum arvense*, and is known, in different sections, by the various names mentioned by your correspondent. It is believed to be poisonous or at least injurious to horses."

RAISING CALVES.

As I raise a few calves each year I will state my method of doing so. First I select calves from my best cows, which by the way, are full-blooded Durhams and grades. I feed them about six quarts of milk right from the cow for one week. I then give them skim milk until they are a month old. I then give them sour milk, six or seven quarts, until they are five or six months old. I think it is better to warm the milk for them rather than to give it to them cold. I prefer keeping them in the barn during hot weather, giving them what hay and water they want, together with one quart each of oat meal. A YOUNG FARMER.

Williston, Vt., Apr. 18, 1870.

MILK AND BUTTER FROM NATIVE COWS.

Having read many accounts of your fancy breeds of dairy cows, I venture to send a statement of the New Hampshire native breed. During the past winter I have milked two farrow cows and one which calved January 25, from which I have sold eighteen quarts of milk a week, used one quart daily in the family, and churned twenty pounds of butter once in two weeks. J. M. W.

Hillsboro' Centre, N. H., April 18, 1870.

EGGS OUT OF PLACE.

If the gentleman that finds eggs out of place in his hen house will remove the straw and hay to the pigs and in the place of it cover the earth or floor with sawdust; allow no straw about except for nests; arrange for his hens to fly to the upper nests, and give them all the corn they have on the cob to pick off as they will, thus giving them exercise, he will soon find eggs in place, or if out of place, where they can be found. MRS. L. F.

Franklin County, Vt., 1870.

PROTECTION AGAINST CROWS.

I am one of those who have spoken ill of the crow for his depredations in the corn field. I tried to keep him out in various ways, especially by *lining* the field, without success. Lines and images did not, in my case, seem to impress him with any of that salutary fear which I desired to excite, notwithstanding some of my neighbors found the lines alone, a perfect protection. By and by some one told me that the line should be put around the field *before the corn came up.* I tried the plan with this improvement, and have always found it a perfect success. I think for the last half dozen years I have not had a hill of corn pulled up by crows, if the lines were in place before the corn appeared. Let others who have suffered try it. I think they will, with me, cease to curse the crows. M. P.

Concord, Mass., May 13, 1870.

THE "OLD" NEW ENGLAND FARMER.

While examining the private library of Andrew S. Fuller, the veteran horticulturist, the editor of the *Rural New Yorker* found an article credited to the "New England Farmer" in a book printed in 1806. Now, as the present NEW ENGLAND FARMER claims to have been established in 1822, the inquiry is made "What was that New England Farmer, published as early as 1806? Who edited and published it, where was it printed, when and by whom was it established, and when did it cease to exist?"

In reply to these questions, we may say that the "New England Farmer," to which the article alluded to was credited, was a book of some 400 pages, of which the following is the title page:—

THE NEW ENGLAND FARMER; or Georgical Dictionary: containing a compendious Account of the Ways and Methods in which the most important Art of Husbandry, in all its various branches, is or may be, practised to the greatest advantage in this country. By Samuel Deane, D. D., Fellow of the American Academy of Arts and Sciences.

"Frigoribus parto agricolæ plerumque fruuntur,
Mutuaque inter se lœti convivia curant;
Invitat genialis hyems, curasque resolvit."—*Virgil.*

Printed at Worcester, Massachusetts, by Isaiah Thomas, sold at his Bookstore in Worcester, and by him and company in Boston. MDCCXC.

The dedication, which is spread over a full page, runs thus:—

To the Honourable James Bowdoin, Esq., L. L. D., President of the American Academy of Arts and Sciences, &c., &c., &c., the following work is inscribed by his much obliged and most obedient humble servant, The Author. *Portland, Massachusetts*, 1790.

The partiality of the author for the classical portion of the title of his book is shown by the fact that on the back of the volume the words "New England Farmer" are omitted, and the gilt letters indicate simply:—"DEANE'S GEORGICAL DICTIONARY."

In consequence of "the rapid sale of the book, arising from the general acceptance it has obtained," a revised and improved edition was published, at Worcester, in 1797, in which "Vice President of Bowdoin College," was added to the previous honorary title of the author. In September, 1822, a third edition was published in Boston by Wells & Lilly, one month after the commencement of the publication of the NEW ENGLAND FARMER in newspaper form.

We thank brother Moore for calling our attention to this old book, as we have looked over its pages with interest. It was published soon after the smoke of the Revolutionary war had cleared

away, and in alluding to this event the author says, in his introduction, that he "has had more zeal and courage in attempting to promote improvements in agriculture, since the happy termination of the late struggle for independence than before. Our holding the rank of a free and independent nation allows us to consider the country as indisputably our own, and ourselves as monarchs over our farms. But the most forcible reason for our cultivating this art, is the indispensable necessity of it, to enable us to live as becomes an independent people. The alarming effect of the present low state of husbandry is, that we are necessitated to import much of our food, and clothing, while we are incapable of making proportionable remittances in the produce of the soil, or in anything else. As a good system of national government is now established, I see no reason to doubt but that a spirited attention to husbandry and manufactures, accompanied with a more general practice of frugality and economy, would put us on a respectable footing; so that such a foundation would be laid for our increasing wealth, that we should be able, in a short time to cancel our publick debts; and might reasonably hope ere long to become an opulent, respectable and very powerful nation."

We think the readers of the NEW ENGLAND FARMER in 1870 will be interested in the following paragraphs written by the author of the "New England Farmer" in 1790. "Forty years ago" is an expression that is often considered as suggestive of better times than our own. Here is a picture of New England farming, as it was seen by a careful observer, twice forty years ago:—

It is much to be regretted, that the most complicated of all the arts, in which the brightest genius may find sufficient room to exert and display itself, should be slighted and neglected by a people not generally wanting in ambition. And it is equally strange and unaccountable, that the most useful and necessary of all employments should have been considered, even by the enlightened people of New England, as below the attention of any persons, excepting those who are in the lowest walks of life; or, that persons of a liberal or polite education should think it intolerably degrading to them, to attend to practical agriculture for their support.

Perhaps, one occasion of the low esteem in which husbandry has been held, in this country, may have been the poor success which has most commonly attended the labours of those who have embraced the profession. Not only have most of them failed of rapidly increasing their estates by it, but too many have had the mortification of making but an indifferent figure in life, even when they have used the strictest economy, and worn out their constitutions by hard and incessant labour. The misfortune has been, that a great proportion of toil has been lost by its misapplication. To prevent this evil in future is a leading design of the present publication. And since many among us begin to be convinced of the urgent necessity of having the attention of the publick turned to agriculture, it is hoped that the following attempt to promote the knowledge of its mysteries, and a spirited attention to the operations of it, will meet with the greater approbation and success. And as a very respectable Society in the Commonwealth of Massachusetts have undertaken to propagate the knowledge of husbandry, the day may be at hand, when the employment of the farmer shall no more be treated with contempt; when the rich, the polite, and the ambitious, shall glory in paying a close attention to their farms; when respectable persons shall confess it is one of the noblest employments to assist nature in her bountiful productions; when it shall be our ambition to follow the example of the first man in the nation, who does not think an attention to husbandry degrading; and when, instead of being ashamed of their employment, our laborious farmers shall, as a great writer says, "toss about their dung with an air of majesty."

HUNGARIAN GRASS.

If properly managed, a large amount of excellent fodder may be obtained by growing this grass. But, as is true in the case of herdsgrass, good fodder and good seed should not be expected at the same time. If allowed to mature its seed the fodder becomes woody, dry, hard, and of little value. For fodder it must be cut early, and if seed is wanted, a patch of suitable size should be raised by itself for that purpose. The attempts to raise both together has excited much prejudice against the Hungarian grass.

The following remarks of a correspondent of the *Prairie Farmer* are worthy of attention, as they state the difficulty correctly. By following them we shall get one of the most valuable crops for horses and milch cows:—

The trouble about Hungarian grass is that it is not generally cut at the proper time. I have raised it several years, and consider it the very best hay for horses. They will keep fat on it, when on Timothy hay they will grow poor. Cut it when in the blow, before any seed is formed; wilt it in the swathe, the same as clover, and make it in the cock. The stalk is nearly solid, and the hay very heavy; and if made in this way, will be as green as grass, and a horse will want little grain for farm work. Give your horses all they will eat of it, and they will fat with decent forage. But if allowed to turn yellow, and form seed, it is the same as any other grain, and will, of course, injure a horse, the same as if he were fed wheat in the bundle to excess. It is better to rake it by hand, but on a good soil you will tumble up a big cock in a small space."

If cut and cured in the same way, there is no better feed for milch cows, nor any that will make more milk. We think the best after treatment is to plough in the stubble as soon as the grass is cut, and sow grass seed in the fall. Grass seed is not apt to catch well when sowed with it in the spring.

MISSOURI.—The agricultural college of Missouri has been located at Columbia, Boone county, in connection with the State University. To secure this location the citizens of the county gave a deed of 640 acres of land, conveniently located to the present University grounds, and $30,000 in cash.

The St. Louis *Rural World* says, the soil, climate, position and social surroundings of the State Agricultural and Mechanical College, are such as will please every friend of industrial edu-

cation, and will satisfy the scruples of the most conscientious parents.

As an act of justice to the people of Boone county, the same paper says, that thirty-one years ago they gave one hundred and seventeen thousand dollars as a bonus to the State University. A private citizen of the county, Dr. Anthony W. Rollins, placed at the disposal of the curators of the State University, a sum now amounting to $26,000, the annual interest of which is to be forever appropriated towards the education of poor but promising youth, of both sexes, at the State University.

SUMMER CARE OF HOGS.

We believe one of the reasons why many fail in realizing what they might from their swine herds, is that they devote too much attention to the corn field, and too little to the hog pasture. In their eagerness to produce an abundance of feed for their hogs in autumn and winter, they are negligent in providing them with sufficient food during the earlier portions of the year. Hogs that are stinted during the summer will not take on fat readily on the approach of cold weather. A good healthy growth should be kept up all the season.

Now the truth is, an acre of clover to be fed off in June is worth more in making pork than an acre of corn that is to be devoured in November. The first can be produced by little labor, while the latter is only raised at the expense of patient and continued toil. The grunting hog delights in fat pastures no less than the bleating lamb and the lowing cow. Pure cold water is as grateful to the one as to the other. In fact the hog has greater need of it than either of the other animals, because he requires a bath every day, and would take it too if he had the facilities.

August is ordinarily a hard month for hogs. The hog pasture, unless it is of unusual size, is likely to become short and much of the ground rooted over. The soil is often parched; the vegetation dried up; the water scarce, and nothing abundant but heat and flies. At such a time, of all times, the hog requires attention.

A crop of peas, if sown even at this late day, will be ripe early in the month of August. Two bushels sown broadcast on an acre of well prepared land should produce at least thirty bushel of shelled peas, to say nothing of pods and vines.

For growing swine in the warm season of the year there are few kinds of food that will compare with peas. They do not need to be harvested—the hogs will do that—will eat them, if they are not too dry, stalks, leaves and all. If peas will form less fat than corn, they will produce more flesh; and that is what is wanted at the period that precedes fattening. They are easy to raise where the soil and climate is suitable for them; do not exhaust the soil like most crops; and come in at just the time they are most needed. In England, where it is impossible to raise corn, farmers rely largely on peas to fatten their hogs; while in Canada, where they can raise very fair corn they hold that more food can be raised from an acre of peas than from an acre of corn.—*Prairie Farmer, abr.*

HOW TO SELECT A HORSE.

Probably in no article of trade are persons so often deceived as in the purchase of horses. So risky is this that many prudent buyers never purchase except on a trial of a week or more, and I would advise all who do not know how to select a good horse to adopt this course.

In buying a horse particular attention should be given to the eye. It should be clear, stand out round and full. The eyebrows and lids should be free from bunches, and there should be no swelling under the lower lids. I would turn from a horse that has a dull, sunken, flat eye. In nine cases out of ten there is trouble connected with it. Either the disposition of the horse will be bad, or he will be lazy, or his eyes will fail. A good way to test the present condition of sight is to lead a horse out of a dark stable into a strong light. If he knits his brow, throws his head up as if to get more light, acts if he wanted his glasses to see clearly—stand from under, you may be sure he has bad eyes.

The feet should also be carefully examined. A horse with bad feet is little worth. A good foot is smooth, tough and solid. The heels firm (not spongy) the frogs dry and the soles shallow. See the foot that the honest smith calls a good one. The shoulders should be of medium size for common use; as then you have good speed and durability.

The limbs should be clean, free from splents, and wind-galls, and spavins and tumors of all kinds, and should look as if made for the body. In movement, the fore legs and shoulders should seem to have but one action. If you want a good horse look well to this.

The body should be well formed, back straight, and the hips lower than the withers. See that the breathing is natural and that there is no uncommon motion under the short ribs. A broken winded horse, unless rosined, nearly always shows this.

A horse with a large fleshy head, and thick neck, also one with fleshy legs should be rejected.—*Ohio Farmer.*

—The Iowa City *Republican* says Mr. A. J. Bond, of this county, is now feeding 169 head of cattle. This lot of cattle will probably bring him $10,000 in addition to the value of the hogs which follow them. He feeds hay and corn from the shock in winter, turning on grass in summer. He will plant 250 acres of corn this season.

LETTER FROM THE FARM.

CONCORD, May 16, 1870.

GENTLEMEN:—Never did a morning dawn upon this beautiful world that seemed to my senses more lovely than this. Never was vegetable life more active and luxuriant at this season. There was a great amount of moisture in the land, and a few days of an unclouded and powerful sun has so warmed the soil, that all plants have started as by some magic influence.

A portion of the apple trees are in full bloom; in a few days they will be so generally. Within a single week grass has grown in an unusual degree. There are fields near me where a thick swath could be cut to-day.

Turning to the Transactions of the old *Massachusetts Society for Promoting Agriculture*, published more than half a century ago, I find some interesting observations recorded in relation to the time of blossoming of apple trees. In 1793, and '94, they were in blossom April 29; in 1795, May 10; 1796, May 4; 1797 to 1803, from April 28 to May 5. This year, it will be May 19 or 20 before the apple trees are generally in bloom.

The following table of the growth of Indian corn, and the number of days from planting for each period of growth, will be found interesting and instructive.

Planted	*Sprouted.*	*Silked.*	*Eotab. green.*
1792, May 4	12 May, 8	14 July, 71	1 Aug., 89
1793, April 23	6 " 13	10 " 78	
" " 26	8 " 12	5 " 70	23 July, 88
" " 27	8 " 11	5 " 69	
" July, 15	22 July, 7	15 Sept., 61	10 Oct., 86
1794, May, 3	15 May, 12	12 July, 70	29 July, 87
" June, 21	28 June, 7	13 Aug., 53	1 Sept., 72
1796, April 27	15 May, 18	21 July, 88	

The principal circumstance which caused any difference of growth, appears to be the time of planting. What was planted about the beginning of May, appears to have required from 86 to 89 days to be fit for eating. What was planted earlier took a longer time to come forward, and did not ripen at so early a date as that planted at the beginning of May. That planted in July lost in the fall the time it gained in summer, and furnished green corn for the beginning of October.

The specimen planted about the middle of June kept its growth the whole summer, and became fit for eating in seventy-two days.

The prosperity of the plant depends more, I think, upon the condition of the soil at the time of ploughing than most persons are aware of. Seeds must have heat and moisture in order to sprout, and when sprouted the germ requires a loose and highly-pulverized bed to travel and grow in. Without this, a plant may live and grow, but its progress will be slow and feeble, and yield little or no profit to the cultivator.

This matter of making the soil fine, has received much attention during the last five years. Ploughs and other implements have been constructed in numerous forms in order to accomplish it quickly and well. In some ploughs they have succeeded in cracking the upper portion of the furrow into innumerable pieces, while the under half remains undisturbed and compact. To reach and break up this portion with the harrow is out of the question. Before it could touch it, the upper surface would be as solid as that below. Nothing but the plough or some implement that lifts and *twists* at the same time will do it.

I have rarely been so much interested and instructed in the art of ploughing as I was a few days since in looking at the work done by some new swivel, or hill-side ploughs, on a neighboring farm. It was soon found that a plough exactly suited to turn a thick, tough sward was not the best one to turn over a tender sward. For the first, a convex mould-board was required, something like the shape of the human hand, when the fingers are slightly bent down; and the other, a mould-board considerably flattened, so that its upper edge should not only break the furrow into numerous particles, but turn it entirely over into its bed as the plough passed along. For completely inverting the soil of a stubble field, a mould-board of somewhat different form may be required. All these were illustrated in the most gratifying manner. The sod on the sward land, as well as on the stubble ground, was not only turned over, but cracked into innumerable fissures, so that a stick or straw could be put into them nearly through the furrow; and when walking over them they had a soft, velvety feel under the foot.

Three or four ploughs were used, all of the *swivel*, or *side-hill* pattern, although the field being ploughed was nearly level. It has been a want long felt by the farmer, to get a side-hill plough that was light, easily managed, and that would do good work on level land, as well as on the hill-side. This has been ac-

complished. Each plough has *four* mould-boards, all adapted to the same beam, so that, with the exception, perhaps, of a light one-horse plough, no other is needed on the farm. These mould-boards are suitable for tough sward, stubble, meadow and sandy loam, where the turf is thin and tender.

It is my experience that a six-acre field can be well cultivated as easily with a swivel plough, as a five-acre field can be with a land-side plough. In the first place, all *dead* furrows are avoided, and these are not only unsightly, but inconvenient, as they are so many trenches where the soil is taken away, leaving barren lines, and piled up in other places where not needed. In the second place, they save a great deal of travel, for wherever a land "is laid out too small to make it an object to set in at the ends, at every round these are passed over without doing any work, and the time is lost. But even where the ends are ploughed, a second ploughing is needed because the furrows become completely trodden dow by the team passing over them in turning. Again, with a swivel plough, a narrow strip may be ploughed on the edge of the field by turning the first furrow against the fence, and so continuing until as many furrows are turned as desired; and this can be done, leaving the ploughed portion level, and the remainder of the field uninjured.

As a matter of convenience and economy, in every respect, the swivel is fast taking the place of the old land-side plough; and, within a few years past several patterns, differing more or less from each other, have been introduced and advertised in our columns. The ploughs used in the trial to which we have alluded were all of the swivel form, and of the series devised by Ex.-Gov. Holbrook of Vermont. With the operation of the other patterns of the swivel plough we are not as familiar as with this. But we are pleased to know that the demand for this style of ploughs has so far stimulated the inventive genius of manufacturers that excellent swivel ploughs are now offered to farmers who have become dissatisfied with the old style of land-sides.

—Woodpeckers, and all the family, are most useful birds. The borer stands but little chance where they have undisturbed access. They penetrate through both bark and wood and destroy this and other pests.

For the New England Farmer.

MUCK IN GOSHEN.

In Mr. O. J. Upham's criticism of what I said in favor of muck, I am charged, in the first place, with living in Goshen. To this I plead guilty. To his second charge of having a large family, guilty, also. To his third charge of supporting a family on a farm on which muck has been used five years, I respond by referring him to Psalm cxxviii. 2.

I believe these are all the specifications he has brought before the public to prove that muck is of no value as a fertilizer, with the exception of his assumption that muck taken directly from the swamp and applied in that state to the soil has no effect.

Muck taken in its crude state directly from the swamp and ploughed into a cold or wet soil, I should say would be slow in showing any good result; as when applied in that condition it has little chance to decompose. But mix it with a warm or sandy soil and it will soon make its presence manifest in letters plainer than printer's ink can do it; not in poisoning peas but in hastening them and other vegetation to a corpulent and rapid maturity.

But before going farther, let us consider what muck is composed of. Usually where you find a muck or peat bed of much depth and size it will be surrounded by higher lands, with one or more streams flowing through it, having formerly been a lake or pond, which was gradually filling with leaves, decayed vegetable matter, floodwood, dust, wash from the uplands, dead fish, frogs and all decayed substances gradually collecting for centuries and forming a vast deposit of material, which I think the Author of the universe intended for the use of man, when the uplands should become worn and reduced to a barren condition by cropping and waste.

To all discerning minds it is becoming more evident that Nature had some wise design in store for man when the world was created, and that all things were intended for some use. We all remember how almost incredible was the news, when first received, of pumping oil from the bowels of the earth. How wonderful are the vast deposits of coal, guano, phosphates, &c., that have been discovered; how startling are the discoveries that science is constantly bringing to light. Let us cease to wonder, as children, and hasten to apply, like men, the means that Nature has stored for the benefit of mankind.

That there should be a great difference in the value of different deposits of muck is as reasonable as the fact is obvious. If the surroundings of the peat bed are sandy, and the timber pine or soft wood, and the soil naturally poor, the peat would be composed or formed of moss, water plants and sand, with the sheddings of the softwood timber. This I suspect to be the case with those peat beds

which are experimented with by those who assert there is no value in muck. Muck of this kind would not of course have near the value of that surrounded by maple, oak, and other hard wood timber with a rich loam for soil.

Mr. Dana says, in his Muck Manual, in speaking of good peat, that it has, chemically, all the ingredients of the best barn manure, with the exception of ammonia, to a small extent. But bear in mind that ammonia is contained in the liquid excrement of all animals to as large an amount as it is in the solids, and that it is impossible to retain it all without an absorbent. Now as muck is the best absorbent known, there can be no reason why muck composted with manure until it ceases to throw off its most valuable gases, should not increase its value to a large extent.

If, as Mr. Upham asserts, there is no value in muck, why is it that one-fourth the manure applied to crops of any kind on a reclaimed swamp show as good and better results, than four times the quantity applied to upland? This fact I will prove to Mr. Upham's satisfaction if he will call on me.

A neighbor of mine has a reclaimed swamp of some fifteen acres, which cuts nearly four tons of good English hay to the acre. This meadow a few years since was a barren peat bog. A slight top dressing of manure, once in three years, is all that is now required.

If you, Messrs. Editors, or the Messrs. Uphams, should ever chance to journey from Easthampton to Florence, Mass., I will refer you to what was once a peat bog, nearly midway between the two towns, where you can see as fine crops of tobacco, corn, and other crops as grow in the Connecticut valley.

Although I have not exhausted my subject, I fear I have the patience of editors and readers, and close for the present.

LORIN BARRUS.

Goshen, Mass., May 12, 1870.

For the New England Farmer.

MEDICAL TOPICS.

BY A MEDICAL MAN.

The Causes of Disease.

Sickness does not, as a rule, come upon us unbidden and uninvited. Whatever may be said of the operations of "Him who worketh all things after the counsel of his own will," it is certain that a large majority, if not all of the diseases which afflict humanity, are the results of the operation of natural laws—the legitimate effects of secondary causes. Some of these causes are beyond our control, and if we suffer, it is no fault of ours; but many, and, indeed, quite the greatest number of these causes may be avoided, either wholly or in part, and if we suffer from their effects our sickness is justly chargable to a disobedience of the laws of health.

The causes of disease are either *predisposing* or *exciting*. Predisposing causes are such material agents, and such omissions and commissions as induce a *tendency* to disease in general, or to some disease in particular. Exciting causes are such material agents, or, what is far more common, such acts or such neglect on our part as directly induce the *disease*, determining both the time and the manner of its occurrence. The errors which induce a tendency to disease and which, thereby, become *predisposing* causes, may be our own, or they may be those of our parents or of others; but the errors which become the *exciting* or *direct* causes of disease are, with few exceptions, our own. The particular kind and character of disease from which a person may suffer, may be determined by either the predisposing or by the exciting cause, and the same agent may be a predisposing cause in one instance and an exciting cause in another; or, some powerful agent may so affect the system as to induce all the phenomena of disease regardless of the operation of any antecedent cause, and, indeed, when no such cause has existed.

Of the various causes of disease, the following are most noteworthy, viz:—

Miasms.

By this term is meant the effluvia, exhalations, &c., which emanate from vegetable and animal matter while undergoing decomposition, ane from the bodies and excretions of sick persons. The exhalations which abound in the vicinity of extensive marshes are called *marsh miasma* or *malaria*; and the emanations from decaying animal matter from stables, privies, crowded and unventilated apartments, the bodies and excretions of sick persons, &c., and which are propagated through the medium of the atmosphere, are called *infections*. Intermittent and remittant fevers are examples of malarious diseases. Typhus and typhoid fevers, measles, small pox, &c., are infectious diseases.

Contagions.

This word signifies such material substances as propagate disease from one individual to another, by contact of person or of clothing. Itch and syphilis are contagious diseases, and small pox and the plague are both contagious and infectious.

Atmospheric Changes,

Especially sudden changes from heat to cold, and from cold to heat; from dry to wet, and from wet to dry; these always predispose to disease, and not unfrequently excite it. Catarrhs pleurisy, pneumonia, bronchitis, &c., are often produced by such causes.

Overwork.

Fatigue of body by excessive physical labor is both the predisposing and exciting cause of many diseases; and the same may be said, and with much greater emphasis, of excessive mental exertion—indeed, too much brain-work

in the case of business, intense anxiety, grief, despondency, &c., are among the most prolific sources of dyspepsia, neuralgia, insanity, and organic diseases of the brain and of the heart.

The Habitual Use of Alcoholic Liquors, Tobacco and Opium.

Although these several articles may be valuable remedies in certain diseases, their value is lost by habitual use, and they become the causes of many diseases. Insanity, apoplexy, epilepsy, and other diseases of the nervous system; dyspepsia, ulcerations of the stomach, cancer of the stomach and liver, &c., are especially apt to result from their daily use.

The Excessive Use of Tea and Coffee.

There are many persons who cannot use these very common articles, to any extent, without injury; and those who might use them moderately, with comparative impunity, are frequently more or less injured by an intemperate use of them. Dyspepsia, palpitation, headache, and various nervous affections, are the diseases most likely to result from the excessive use of these articles.

Intemperance in Eating.

Eating too much, and eating improper food, are very common causes of dyspepsia, gout, diseases of the liver, constipation, diarrhœa, &c., &c.

Sexual Abuse.

This, solitary and social—legal and illegal—produces more chronic and incurable diseases than all other causes combined. Do I state the case too strongly? I believe that every candid physician who has practiced his profession during any considerable number of years, and who has observed carefully the causes of disease, will agree with me in such an assertion. This evil—wide-spread, and destructive, far beyond what is commonly supposed—predisposes to almost every disease by weakening the general tone of the system, and thus rendering the person more liable to be affected by the ordinary exciting causes of disease; and besides, it is itself the exciting cause of a class of diseases whose name is legion.

For the New England Farmer.

AGRICULTURAL SCIENCE AND COLLEGES.

Agriculture is practical—not theoretical. It can only be taught in the school-room, as navigation is taught there,—simply in theory. "When science and art have done their best for the preparation of the soil," says Mr. Everett, "they have but commenced their operations in the lowest department of agriculture."

When we enter the field of agricultural research, and study the mysteries of assimilation—the laws of composition and decomposition—the reduction of inorganic mineral and vegetable substances to an organized condition that shall raise lifeless nature into action, and transfer air, earth and water into bread, beef, pork and wool, for food and clothing, we shall behold the great mystery of production and reproduction, and the unaccountable results of light and heat upon the vegetable kingdom.

The skilful agricultural chemist may mix soils, and compound minerals, but with all his apparatus, and with the aid of a thousand drug stores, he cannot create a single element, or fabricate the smallest leaf in the vegetable kingdom. The manufacture of a single kernel of wheat, or corn, with living, reproductive power, is as far beyond his power as the creation of a new world.

That agriculture should advance to the state of a physical science, no sensible man will deny. Agriculture is an interest that men both private and public are by far more inclined to praise than to help by legislation or otherwise.

The professions of law, medicine, and theories have in all past legislation demanded and received favor and support. This error has its ground not so much in the merits of the case, as in the fact that theory is restless and active,—labor quiet and passive. I doubt there was ever a people more free in their praise of the great system that feeds and clothes mankind than ours, and I had been led to hope that the funds appropriated to the several States by the Morrill Bill would be applied to the promotion of *practical progressive agriculture*; but by the manner in which many of the States have already disposed of this fund, the old institutions of learning, already rich and presumptive, will gain new strength; their laboratories will be enlarged; professors increased and a new stimulus given to the old theories, that shall work a detriment to the progress of agricultural science. This will draw more sweat from the laborer's brow; lessen the charms of rural life; degrade and disgrace honest labor; throw a new halo of glory around the altar of speculative philosophy; leave the sublime work of tilling the soil to "move on in the even tenor of its way" in the transformation of air, earth and water into food and clothing for man and beast; revive soil analyses, with all its follies, and demand a professorship and chemicals for the purpose of "restoring exhausted fertility and revealing and expounding the laws of vegetable physiology," to teach the practical tiller of the soil how to cultivate his fields with *drugs* and *chemicals* by the "arts and sciences."

I would not assume that science is not a co-worker with man in conducting agriculture upon a wise and practical basis. I object to the application of this fund, or any part of it, to the dissemination and support of a *false theory* and a *false philosophy*. Science, in its primary relation to the cultivation of the soil is practical and effective. The transformation of the organized materials and elements of earth into food and clothing is sci-

ence, in its most comprehensive form. In this noble work, God puts in all the "stock in trade"—man puts in his highest conceptions of Divine wisdom and power, and of physiological laws to guide him in carrying forward the noblest of all avocations within the scope of human industry.

How unlike the tricks and schemes of art and trade are the study and practice of agriculture. To learn the nature and use of mineral and vegetable substances, the agents that influence and govern them in their composition and decomposition; the relations they hold to each other, to light, heat, frosts, rains; the overhanging atmosphere; the process of condensing volatile fluids in vapors, dews and showers, by the changing currents of the atmosphere. This is the science of nature. God is the teacher; the open field the schoolroom. Science shows the relation both mind and matter hold to physiological laws; its application to agriculture, by *theory*, is vague, and positively uncertain. How the raw and unorganized materials of all cultivated plants should be re-combined, so as to give the greatest return for any given capital and manual labor, are problems in agriculture, which learned science and steady industry alone can solve. Every dollar dug out of the earth by the agriculturist, pays a double toll into the treasury of the State.

I believe it was the design of the mover of this great enterprise to diffuse among the masses the scientific and primary knowledge of agriculture, by establishing in every State in the Union a fund that should be devoted to the interests of those engaged in rural pursuits. It must be admitted by all that every other human enterprise would be largely benefited by encouraging the productiveness of rural labor. Such a course of instruction would give *mind* the power over *matter* in all results of rural industry by which, instead of exhausting the soil of its bread-forming elements, the earth should be made to grow richer and the State stronger. Why should not farmers have the same facilities for scientific and special education so long enjoyed by lawyers and doctors? The speculative philosophy which is allowed to keep the company of the "arts and sciences" of the old theoretical schools is no guide to one engaged in rural pursuits, but would lead him astray in the acquisition of that knowledge which imparts productive value to the labor of human hands. As the mind of a human being lacks science or knowledge, his physical force depreciates in value. Give us a model farm and model *farming*; not model buildings, not a palace for professors and chemicals; but teach such farming as may be done profitably by any intelligent farmer. Not only sow seeds in the earth, but also sow seeds of knowledge in the minds of men that shall produce a harvest in future generations.

In this country we spend too much money in educational buildings, and then starve the teachers and paralyze the germ of the science to be taught. There is no nation under the sun where knowledge gives man so much *power* as it does in this country. With unbounded fields and a broad liberty, full scope is given to the noblest ambition of the highest aspiration. Give the young ruralist clear and comprehensive views of the cultivation of the earth, and a correct knowledge of the nature and power of the elements that surround him, and with which he has to deal. Liebig says, "you have no first class professors in America; but you have instead first class mechanics, first class business men, and managers of large and colossal establishments." The great philosopher runs aground here; we need no "great professors" in progressive "young America," no more than we need great bishops or great priests. If there is one thing we need to know, it is how to till *our* soil. Agriculture is one continual experiment. Science, as applied to agriculture, in my next.

L. L. PIERCE.

East Jaffrey, N. H., 1870.

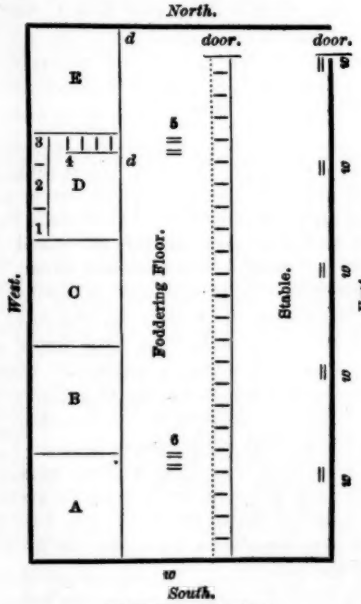
REMARKS.—In discussing the character of the institutions established under the congressional grant, it should always be remembered that the fund was accepted under certain conditions. The law expressly provides that the interest of the fund shall be devoted by each State "to the endowment, support and maintenance of at least one college, where the leading object shall be, without excluding other scientific and classical studies, and including military tactics, *to teach such branches of learning* as are related to Agriculture and the Mechanic Arts." The acceptance of this grant, obligates compliance with its conditions. And hence it would seem that the name, "Agricultural College" is an improper one, for a single institution, as the title of the Bill reads, "Colleges for the benefit of Agriculture and the Mechanic Arts." Massachusetts established two colleges under the Act—the Institute of Technology, "to teach such branches of learning as are related to the Mechanic Arts;" and the Agricultural College "to teach such branches of learning as are related to Agriculture." Maine calls her institution the "State College of Agriculture and the Mechanic Arts;" New York christens hers the "Cornell University."

Whether a better law could have been passed, or a better plan devised for the promotion of agriculture is another question.

For the New England Farmer.

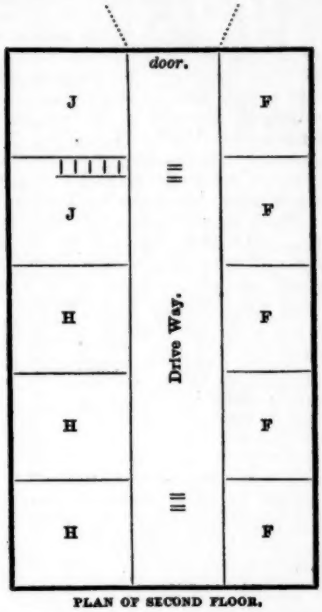
HAY AND GRAIN BARN FOR CATTLE AND SHEEP.

The following is the plan of a barn built on the farm of Jedediah Smith during the summer of 1869. It is 40x72 feet, with posts 21 feet, with basement under the whole, nine feet in height. The basement is level with the ground around the barn, except at the north end, there being a bank with a wall built perpendicular with the north end, with a jet back nine feet from the ground on which sets the end of the barn; the rest of the barn resting on posts securely braced. There are twenty of these posts, which are arranged in five rows of four posts each across the basement, two of each row being under the side sills. The south end is open. The east side receives the manure from the stable above and the remainder of the basement can be divided into as many apartments as may be desired, by bars extending from post to post. There is a drive-way across the cellar near the centre, with doors on each side. The water trough may be located where most convenient. There are windows on the side to correspond with those in story above. The plan of the basement is so simple that it is hardly necessary to present an engraving of it.



PLAN OF FIRST FLOOR.

The stable is 12x72 feet, with entrance at side, as the end is against the embankment; a bridge or platform rising from the yard to the door. The = indicate traps for passing the manure to the basement below, with windows at *w*. The stable floor declines two inches. The foddering floor is 12x72, with cribs 3 feet wide. A, B, C are bays for hay, 16x14 feet. D, clutter-hole, with stair way leading to second floor. E, calf pen, 16x16. 1, 2, 3, are grain boxes; 5, 6 are trap-doors for passing hay, &c., to basement. At south end of the foddering floor is a window of 12x2 lights.



PLAN OF SECOND FLOOR.

The driveway is 19 feet above bottom of basement and 10 above the first or foddering floor. At the south end is a long window, also one over the door opposite. The four divisions, marked F, are for hay. They extend three feet lower than the floor, and may be called either bays or scaffolds. They are over the stable. H, H, H are bays for hay, 14x16 feet. J, J are scaffolds, one 14x16 and the other 16x16, with stairway.

Thirteen feet above the drive way there is a floor 16 feet wide, extending the whole length of the barn, intended for standing bound grain while green, and as there are windows at each gable end, the circulation of air is so free that grain cures nicely here.

The roof is boarded lengthwise and shingled with pine and spruce shingles, laid six inches to the weather. The body of the barn is covered with two thicknesses of boards put up and down.

The owner of this barn had other out-buildings for horses, carriages, &c., and this was designed especially for cattle and sheep, hay and grain. Those differently circumstanced might desire some slight modifications, but

I think the plan combines as many conveniences as any barn I ever saw.

Grantham, N. H., 1870. A READER.

TRAVELLING CONTRASTS.—It is looked upon as a matter of wonder, to find any adult person now, who has not travelled in the cars, pleasantly reading, talking or sleeping, and at the rate of three or four hundred miles in the course of twenty-four hours? And this tends to health, general prosperity and a higher civilization.

What a vast change has taken place in this respect in a comparatively short space of time. About 1650, Mr. Pennant, in his "Journey from Chester to London," says:—"The first day, with much labor, we got from Chester to Whitchurch, twenty miles; and on the sixth day to London, about 100 miles, before the commencement of night. The strain and labor of six good horses, sometimes eight, drew us through the sloughs in many places. We were constantly out two hours before day, and as late at night; and in the depth of winter proportionably later. Families who traveled in their own carriages, contracted with Benson & Co., and were dragged up, in the same number of days, by three sets of able horses. The single gentlemen, equipped in jackboots and trowsers up to their middle, rode post through thick and thin, and, guarded against the mire, defied the frequent stumble and fall; arose and pursued their journey with alacrity."

About 1670, the journey from Oxford to London, which is under sixty miles, occupied two days. An invention called the "Flying Coach," achieved it in thirteen hours; from the middle of September to the middle of March, it was uniformly a two days' performance. Now some people grumble if they do not make that distance in two *hours*.

THE CURRANT WORM AGAIN.

This pest has appeared again, and has commenced the work of destruction in earnest upon the leaves of the currant bush. We find no account of them in Harris, Fitch, or Kollar. The eggs which produce them are probably from a fly of some kind. They are deposited on the under side of the leaf, in rows, and placed, usually, on the centre rib of the leaf, sometimes on two or three of the ribs. When hatched, they eat a small hole through the tender leaf, and then march off to its edges, and frequently surround it entirely. How long the eggs will continue to be hatched out we do not know; indeed, very little seems to be known of the fly that deposits the eggs, or the habits of the worm that destroys the foliage. We hope some one will give us information on the whole matter.

Various modes of destroying the worm have been suggested. We have tried several ways, but find only one that promises success, and even that remedy may prove destructive. The remedy is to begin to pluck off the leaves containing the eggs, as far as they can be found, and follow this up, picking off the leaves containing the worms, as fast as they are hatched. They are easily found by the broken leaves or bare stems. But if this process is carried too far, the growth of the fruit will be suspended, by arresting the action between leaf and fruit. The flour of hellebore sifted upon them is said to destroy them. This is a poison, and must be used with care. The carbolic soap did not kill them in the experiments first made. They evidently disliked it, but would shake their sides and crawl off. A stronger dose might be more effectual with them. Now is the time to look after the pests and exterminate them.

A correspondent of the Oneida *Dispatch* says: "To destroy the currant worms, go out at 8 or 9 o'clock in the evening and jar the bushes so as to throw the worms on the ground. Do this three successive evenings, when the worms make their appearance. This will finish them for the present year, and if everybody will do it for three successive years it will destroy the race."

THE CURRANT WORM.—Mr. Charles Blaisdell, of Wellesley, Mass., informs us that he has been successful in destroying the currant worm and other plant insects by the use of Buchan's Carbolic Acid Soap. The soap sold for laundry or common washing purposes contains much less carboline, the principle destructive to insects, than the preparation sold as Carbolic Plant Protector. The former was the kind we used in the experiment alluded to above. The latter, which we have since tried, we find to be fatal to the worms when dissolved in water and sprinkled upon them. We notice also a statement by Rev. Dr. Marvin of the Boston *Daily News*, that he found a showering applied to his bushes, cleared them of worms in a few minutes. A dusting of White Hellebore is also said to prove effectual, but this is a costly and somewhat dangerous poison to use. The carbolic suds, it is claimed, is harmless to foliage and person.

As this worm threatens the destruction of our currant bushes, we hope this remedy will be carefully tried by those who are unwilling to be deprived of this delicious fruit.

—The Rockingham County, N. H., Agricultural Society will hold its fair on the 14th, 15th and 16th of September next. Place not given.

EXTRACTS AND REPLIES.

A METHOD OF GETTING HAY.

In these days of high prices for farm labor, and low prices for the products of the farm, any way of producing a desired result by a less expensive process than the usual one, is to be adopted by the progressive farmer without hesitation.

A process of curing hay has been adopted and followed by several farmers of my acquaintance, which, as far as I can learn, has proved very satisfactory, for several years.

It may be that this process has been followed very much more extensively than I know of. If so I would like to hear the opinions of persons who have tried it.

It is as follows: The hay is all cut in the afternoon, when entirely free from external moisture. Next day, after the dew is all off, it is turned. After dinner it is raked, and got in without delay. There is no cocking at night, and opening next day. All such labor is saved.

One man who has practiced this several years, is justly considered one of the best farmers in town. His stock look well, and produce as much as any. His farm improves yearly; his buildings are in the best of repair, and he makes an annual investment every year, outside. He considers his hay to be better than when cured the old fashioned way, and it certainly looks and smells as well as any I ever saw.

The hay crop of New England is one of vast importance. More than any other, it lies at the basis of all farming. According to its increase or decrease, the increase or decrease of the manure heap, and of the consequent productiveness or sterility of the soil, may be reckoned. And it is plain that any improvement in the manner of securing the crop will increase the amount produced.

The method of curing with salt and lime, which attracted so much attention two years ago, although not very satisfactory for the curing of fodder, has saved me a good deal of labor in curing bog hay for litter. I use four quarts each, salt and lime, to every ton. But how about the other process? JOHN.

Franklin, Mass., 1870.

WINTERING BEES.—BUNCHES ON CATTLE.

Will you or some of your friends tell me what is the best way to winter bees? We have lost quite a number the last winter. And what is the cause of small bunches on the skin of cattle? What it is and how to cure it? A SUBSCRIBER.

South Sangerville, Me., 1870.

REMARKS.—Bees wintered badly the past season in many parts of the country. Jasper Hazen, of Albany, N. Y., gives the particulars, in the *Country Gentleman*, of the result of the experience of quite a number of bee-keepers of his acquaintance. Three different methods were practiced by these men. Some kept them upon the stand, some put them in cellars, and others buried them in the ground. The burial process is described as follows: A trench is dug two feet and ten inches deep, and of length proportionate to number of hives. The hives were kept from contact with the dirt by boards and straw, and ventilation secured by a pump stock one and a quarter inches in diameter. The dirt was then thrown on as a farmer would bury his potatoes.

Names of owners and other particulars are given, but the result, in brief, may be thus stated: of the 98 colonies left on the stand, 86 died, and 12 lived; of the 29 in cellars, 12 lived, and 17 died; of the 35 buried, 28 lived, and 7 died.

Mr. Hazen further states that he is informed that Mr. Marsh, of Sharon, Vt., who has buried his bees for a number of years past, has satisfied himself, by careful weighing, that their average consumption while buried does not exceed five pounds per colony. This is making out a strong case in favor of burying bees, and we solicit the experience of other bee-keepers as to the best way of wintering swarms.

By "small bunches on the skin of cattle," do you allude to those lumps generally found near the back of the animal, which are caused by the larvæ of the gad-fly, sometimes called "grubs," "wormals," &c? In Webster's large dictionary you will find, by turning to "gad-fly," pictures of the fly that deposits the egg in the skin, and of the larvæ, or grub, which finally changes to the fly as it leaves the animal. These grubs may be pushed out of the bunches by a sharp pressure of the two thumb nails, or destroyed by a sharp awl or needle. It is possible that a good suds of carbolic acid soap, well rubbed and carded in, will destroy them. It is said that the fly generally selects the healthiest animals for the breeding place of its young.

TOO MUCH LAND—FERTILIZERS—SWEET CORN.

Having taken your valuable paper upwards of two years, and having never seen anything in its columns from this town, I thought perhaps a letter from this region might not be uninteresting to at least some of your readers. I am not much of a letter writer, as you will readily see; nor am I much of a farmer. Yet I take the greatest pleasure in reading the NEW ENGLAND FARMER, and often wonder why it is not read by more village people who have a rod of land to cultivate. My principal business is merchandising, but I have a house and about three-fourths of an acre of land about a half mile from my place of business, and if I had ten acres as good as this small lot, I think I would sell out my store and pay my whole attention to farming.

I think one great trouble with farmers in this region is, they undertake to cultivate too much land. They think they must work over about so much every year, whether they have dressing for it or not. So they spread on their manure and make it go over four or five acres, when the quantity is hardly sufficient to secure a good crop from two or three acres. I sometimes ask such farmers why they do not purchase phosphate, and their answer generally is that it does not pay, or that they cannot afford it; and sometimes their answer is that they bought one cask and it was good for nothing, and consequently they had no faith in patent manures.

I think, Mr. Editor, there is more or less stuff sold through the country for patent manure that is worthless; but on the other hand there is much that is good. And if the farmers would all subscribe for the NEW ENGLAND FARMER, or some other reliable agricultural paper, I think it would be money in their pockets. I have for the past three years used Bradley's Patent Superphosphate of Lime, and have always been satisfied with my crops, and have often astonished the farmers in this vicinity, by telling them what I have raised from my farm of three-fourths of an acre.

I keep a cow which has given on an average eight quarts of milk per day, all winter, which is not a great yield to be sure; but I think she has done well, considering that she has eaten no hay of any account but meadow. I give her some potatoes, shorts, and a little meal. The first of the winter I gave her sweet corn stalks, which, by the way, I think is the best fodder a cow can have, and I have made up my mind to plant this spring less potatoes, and more sweet corn, not only for the stalks, but also for the corn, which I have an idea is much better for hens and for fattening pigs than common corn. I fed out a lot to my pig last fall and I thought it made pork faster than the common corn meal had before or did afterwards. If any of the readers of the FARMER have ever fed it to hens or pigs I would like to hear from them. CHOCORUA.

Guilford, Lake Village, N. H., 1870.

ATTENDING STRICTLY TO FARMING.

I have been much pleased with the large liberty you give in the FARMER to all men for the expression of their minds, whether they favor muck or no muck; but the difficulty with some of us, backwoodsmen, seems to be in making ourselves understood.

I had not a thought in my communication of April 23, of objecting to farmers owning all the bank stock they could pay for, and all the mills they could manage. By no means! Some of the very best farmers of my own town are those who own all these things and more also, and let any one see their well tilled farms and splendid herds of thoroughbred cattle and sheep and he will not say that they have "lost caste as farmers."

No, no, Mr. Editor, the *bedstead* is not of my construction. I only designed to point out the inconsistency of men preaching "stick to the farm," "attend strictly to farming," &c., &c., while they themselves indulge in the luxury of other and more profitable employment. And were I allowed a guess, it would be that John P. Gager, Jr., did not pay for two large farms and accumulate $1000 worth of produce before engaging in outside speculations, or more properly *other business*; but that his farming and milling went hand in hand and that his "bank stock" was the result of both.

G. R. HITCHCOCK.

Champlain, N. Y., May 20, 1870.

REMARKS.—Farmers are getting so tired of this "inconsistency" that they do not listen very patiently to orators, poets, or "talking farmers" who discourse learnedly about the profit and the nobility of the farmer's vocation, when it appears that these men have all their lives "attended strictly" to some other business, and design that their sons after them shall do the same. This extolling farming by words, though smooth and eloquent, and condemning it by actions, sharp and powerful; this rowing one way and looking another, disgusts many and is putting the theoretical and the practical farmer at arms-length.

RED WATER, AND HOW CURED.

I had a valuable cow taken with this disease, some eight or ten days after dropping her calf. Her water was the color of a strong decoction of hemlock bark. I went to the NEW ENGLAND FARMER for a remedy, but found so many cures and all composed of such small amounts of various ingredients that they appeared too small doses to cure a cow. I then applied to a neighbor who had had some experience with this disease. He told me to take a pint of spirits of nitre, and an equal quantity of water, and give it in three doses, once in six hours. I gave her two doses, and finding that she was much better, thought it best to wait a few hours and note the result. In twenty-four hours she was perfectly well, and remains so.

WM. S. FOSTER.

North Tunbridge, Vt., May 3, 1870.

SCHOOL DISTRICT NO. 6, BROOKFIELD, VT.

Within the limits of this district there are 155 persons in all,—old and young, male and female. There are 53 males over 18 years of age—of whom 15 will average 71 years of age. There is not an intemperate person in the neighborhood, nor a loafer, unless some of us, old chaps, who can't do much else may be charged with snuffing and chewing a little,—the result of bad habits and patriotism, as we thereby help pay the national debt, you see.

But what about the district? Though not duly appointed to take the census, I have pretty thoroughly canvassed this neighborhood, and beg leave to make the following report, which includes the year from March 1869, to March 1870. Our territory comprises 2577 acres, or about four square miles. On this little farm there were raised, during the year:—

Wheat	450 bushels	Roots	1230 bush
Corn	1960 "	Butter	2100 lbs
Oats	2787 "	Cheese	6325 "
Indian Wheat	1424 "	Pork	17,280 "
Rye	68 "	Beef, (killed)	18,858 "
Barley	30 "	Sugar (poor run)	7228 "
Potatoes	3735 "		

The cash value of which is estimated	$16,012
Horses, oxen, cows, calves, sheep, lambs, pigs, poultry, eggs and wool sold, say	5,000
	$21,012

In addition to which we cut 660 tons of hay. Our stock consisting of 51 horses, 10 yoke of oxen, 135 cows, with young stock, swine, &c., was estimated on the first of March, 1870, to be worth $17,912.

Now, one word to those who are scolding about the high prices of beef, pork, butter, &c. Last fall when our stock came to the barn it could probably have been sold for $15,960. Estimating our 660 tons of hay at $15 per ton, it was worth $9900 at the same time. These cattle have eaten up all this hay, and now let us figure out the profits of our winter's work in feeding stock:—

Value of stock last fall	$15 960
Value of hay consumed	9,900
	$25 860
This stock is now valued at	17,912
Showing a loss of	$ 7,948

for which we have nothing to show but our manure. Now, dear city friends, don't suffer your bowels of compassion to burst for our sakes. Like ells, we are accustomed to being flayed. It is one of the taxes we annually pay to keep our farms in running order. And though the figures look a little discouraging, we take hold of another year's labor with our usual courage. V. BAKER.

Brookfield, Vt., 1870.

LIME AND OYSTER SHELLS.

I have taken the NEW ENGLAND FARMER for about twelve years, and have read no paper for sixty years that I think is of more advantage to the public, and wish for its future prosperity. But I saw in it a statement by Dr. Nichols, which I consider the greatest blunder that I ever read, and one calculated to mislead those who know no better. He says lime or carbonate of lime is use-

less in agriculture, or words to that effect. I say, from long experience and observation, that there is no good soil without it; and where it is abstracted by long tillage it must be added. No fertilizer is of itself useful till it is decomposed and mixed with other materials.

The beautiful gardens near New York, in New Jersey, owe half their fertility to being on oyster shell beds. There is an oyster shell bed ten miles from me where corn has been planted for twenty years in succession, holding good without any other manure. The upper part of New Jersey owes half its fertility to burning their rocks and liming their lands once in seven years. Those shells spoken of had been doubtless partly burned, but if they were wholly burned they would be four times as valuable. Doctor N. makes me think of another doctor, who thought there was no harm in kindling a fire on a carpet, because it is the nature of fire to ascend upwards.

Lime cleanses the soil, prevents weeds, kills insects, makes fair fruit and vegetables and is indispensable. Where oyster shell beds are or where bone dust is used, cabbages will grow twenty years in succession, while in other places they cannot often be raised more than one year. Peter Henderson, who has been made rich by gardening, the author of Gardening for Profit, will tell you the same. I have known the use of lime on land from boyhood, and am now about 86. Lime is the great thing wanting to bring back the fertility of worn out soil. It enters in some shape into all grain, seeds, vegetables or animal life.

Deep River, Conn., 1870. PHINEAS PRATT.

SAW DUST BEDDING.

During the past year, I have been doing a fair business in supplying stables with saw-dust for bedding, and I would like to give the saw-dust ball of some of your correspondents one more turn. Without particular reference to its value for manure, as that is a secondary consideration with stable keepers, which is the cheapest and best bedding, rye straw at $25, oat straw at $22, meadow hay at $15, or saw dust at $4 a cord?

Massachusetts, 1870. ANONYMOUS.

REMARKS.—If you throw its effects on the manure out of the question, the cheapness and efficiency of sawdust as a bedding is a point which must be determined by the experience of stable keepers, and we refer your inquiry to them.

DUSTY HAY.

I suspect that your correspondent G. B. H., Jr., who complains of dusty hay, has a tight barn, and that after the cold weather began he kept his doors and windows closed, thereby causing the moisture from the breath of his leanto, full of cattle, to settle upon and around his hay, which would make it musty. One spring, several years ago, the writer was examining the hay in a large new barn, and found it all more or less musty. Upon inquiry, he was told that as soon as the cold began the fall before, the ventilator was closed, and that in the coldest weather, (there being a large stock of cattle in the barn) the sides and tops of the mows, and also the sides and top of the barn were covered with a thick coat of frost every morning. To my mind, that solved the question.

As to the dust gathered by iron-tooth rakes, we think, as a farmer once said, he intended to have men smart enough to shake the dust all out of the hay, when spreading it the second day.

Hay well dry will keep well in a tight barn without ventilation; but with a large stock of cattle in the barn it is necessary to have some kind of ventilation. In old times, before it was thought necessary to have barns made tight, the cracks between the boards gave sufficient ventilation and there was less complaint of musty hay.

Reading, Mass., May 21, 1870. A. G.

TWIN CALVES.

Will anybody be so kind as to inform me whether twin calves make as good cows as those that are not twins? ALBERT S. HATHAWAY, JR.

East Wareham, Mass., 1870.

REMARKS.—We have heard it said that twin heifers were not as likely to do well as others, but we have no facts bearing on the question, and are disposed to think there is no ground for the opinion. Shall like to hear from those who have been more close observers than ourselves.

Ladies' Department.

CARNATION "GEN. GRANT."

The beautiful picture on our next page, reproduced from Hovey's new Catalogue of Plants, represents one of the latest acquisitions for the flower garden. It is white, and produced in clusters, and blossoms through the season. Breck gives the following interesting description of the Carnation:—

There is no flower more desirable in the flower-garden than the Carnation. A well-grown, superior variety, cannot be surpassed in elegance, beauty, or odor, by any other flower; yet we scarcely ever see it in perfection. Its cultivation in our climate is attended with many difficulties, which may account for its rarity. Our winters are too severe, and springs too changeable, to keep it in perfection in the open ground; and then our summers are too dry and hot for the full development of its beauties. Seedlings stand the winter and spring without difficulty, with a light covering of leaves and evergreen boughs, and flower very well; but then not one plant in a hundred will be considered worth saving by the florist, although they will all be interesting as single, semi-double, or irregular flowers, and richly repay all the labor. Valuable varieties are generally propagated from layers, which often keep very well in the open ground by letting them remain with the parent plant, and covering them with leaves and pine boughs; but the most certain way is, when the layers have taken root, to pot them, and at the approach of winter put them in a frame where they may be kept with perfect safety, provided air is given them in mild weather, and they are not exposed to the sun when in a frozen state. The mice are very destructive to all Pinks; therefore the frame must be tight.

The propagation of the Carnation by layers is a very simple operation. When the plant is in perfection of bloom, lay around it one and one-half or two inches of compost, first

Carnation "Gen. Grant."

gently stirring the surface so that it may mix well; remove the lower leaves of the shoots selected; pass the pen knife, slanting upwards, half through the joint; fasten the shoot, where so cut, about two inches under the surface, with a small hooked peg, bending carefully so as not to break it at the incision; then fix it firmly by gently pressing the earth around with the fingers, and finish by cutting off about half an inch of the upper extremities of the leaves with scissors. The sap soon begins to granulate at the wound, and throw out roots. In about a month or six weeks, if the soil has been kept moderately moist, the layers may be severed from the parent plant and established for themselves; or they may remain where they are, if the stem to which they are attached be carefully cut off.

The Carnation requires a rich, generous, deep soil. A compost of three parts of good, strong garden loam, three parts hot-bed manure, two years old, three parts of coarse river sand, two parts dry manure from the hen-house, sifted, and two parts of soot from a wood fire, has been recommended.

For the New England Farmer.

FLOWER GARDENING FOR JULY.

"A gracious mother art thou, kind July!
Thy lap all laden with most precious things;
Earth seems to mingle with the distant sky,
That sheds a hallow'd light upon thy wings."

It is now high summer in the deep wood, and through the broad meadows the tender grasses and flowers are profusely scattered. Our gardens are also bright with the gorgeous

blossoms of the "bedding out plants." We number thirty-five Geraniums and Pelargoniums of all sorts and colors. A large border is given up to them, and they are one mass of scarlet, cherry, pink, salmon, white, striped and spotted. A glorious combination! The variegated leaved varieties, *Mrs. Pollock*, *Golden Pheasant*, *Golden Vase*, *Cloth of Gold*, and *Mountain of Snow*, gleam like jewels under the bright rays of the sun. Their flowers are scarlet, but very inferior in size to the *Zonales*, so we gather all the buds, thereby throwing the strength of the plant into its leaves, which form a perfect edging to dishes of flowers. A lovely vase or dish can be made of several sizes of plates. Take the largest size the pantry holds; edge it with the leaves of *Mrs. Pollock*, mingled with white flowers, feverfew, white candytuft, or any pure white blossoms; turn water into the plate, and cover a smaller plate, bottom side down, upon it; around the edge of this arrange leaves of *Mountain of Snow*, or any of the silver-edged varieties; place among them scarlet Verbenas or Geraniums, or any scarlet flower you may have; turn in the water, cover with a smaller plate; upon this mingle leaves of *Achyranthens* or *Coleus*,—if the former, intersperse them with yellow flowers—*Golden Alyssum*, *Chlora*—or any you can select. Proceed as before, and place a shallow glass dish over the stems; fill this with bright leaves, sweet-scented Geranium leaves and blue Delphinium or Forget-me-not or blue Sage, with a large proportion of white and pink, light delicate flowers. Over the whole of it put the feathery Cleaver or Mist, or Gypsophila muralis. The effect is truly artistic! Purple flowers can be substituted for the blue, if more easily obtained. A lady can make her own selection of colors—the brilliant Tropæolums mingle prettily with the dark leaves; the fairy bells of the Fuchsias are very lovely among the silver-edged leaves. A dish of flowers thus arranged, will be a "thing of joy" for two or three days, and makes a beautiful ornament for a dinner or supper table. Flowers are always a delight when arranged in the dining-room. Even a tiny vase, with the moss rose, a fuchsia, and a few leaves, is a great appetizer. The great man of Queen Elizabeth's court—the immortal Bacon—never sat at his table without flowers. In them he recognized the hand Divine. There is a fascination attending the cultivation of both flowers and fruit—one gratifies the eye, the other the palate—but we must attend closely to their cultivation to bring them to perfection. Every morning they claim some attention. With a hand rake and hoe the soil should be stirred frequently. Much finer vegetation is attained by this simple thing. High cultivation is most needful in a flower garden, also daily waterings. The English gardeners in their "misty moisty climate" are not forced to use the watering pot so often; but our dry, hot summers require frequent applications of warmish water, soap suds, and liquid manure. Last season we used quantities of Bradley's Superphosphate around all our plants, and they flourished finely. This season we are using a new fertilizer, purely mineral, being the pulverized ore of the Dolomitic part of the gold mines of New Hampshire. It contains thirty-two per cent. of carbonic acid, which is said to be the cause of the high state of vegetation in California. Japan lilies, Gladiolus, Roses, Geraniums, with all the beauteous sisterhood of flowers, are making most vigorous growth. It is a grayish white powder, perfectly inodorous, and for all green house plants, as well as for those of hardier habits, is unequalled. It is now ready for market, and it will find many consumers when its desirabilities are known.

Carnations and Picotee Pinks are now in their glory. Of all the beauteous flowers which adorn the garden, whether by their beauty or their fragrance, the Carnation may take front rank. Second only to the Rose is this perfect flower! It is easily propagated by layers, which should be made when the plant is in its fullest bloom. Select a strong, vigorous stem, and remove all the lower leaves, so that they need not decay in the soil when the shoot is fastened down. Cut a slanting slit a quarter of an inch above a joint, forming a tongue, and smooth off its tip; then bend down the shoot, taking great care not to break it, fasten it down with a strong hair pin, (these same pins are invaluable for pegging down verbenas, and all runners); and cover the tongue with not more than three-quarters of an inch of rich soil, with a good mixture of sand. Shade it from the sun for three or four days, water every night thoroughly, and in three or four weeks it will have become well rooted. Cut the shoot from the main stem, leaving half an inch of the stem, which connects it on to the layer, and pot it in rich soil composed of three parts turfy loam, two parts of well rotted manure and one part river sand; a teaspoonful of lime is a useful ingredient, it being so destructive to worms; but it should be well mixed up with the compost.

Picotee Pinks are a hardier species than the Carnation, as they will often endure a New England winter, yet to bloom in full perfection they should be potted. They are propagated by seed and cuttings—the former, if sowed as late as this month will make fine plants for spring blooming, in the house or garden. The latter are taken off from young shoots while the plant is in its most vigorous condition. Cut them just below the third or fourth joint, smooth off the end, pull off the lower leaves, plant them half an inch deep in sand, but place good soil underneath, so that the tender rootlets can find rich food. Shade from the sun for a week, water thoroughly—if possible cover with glass. When they appear to have struck root, give

all the sun you can. They require the same compost as the Carnation.

All potted plants desire a good supply of water at this season. It should be given to Fuchsias twice a day, and they should not stand where the noonday sun falls directly upon them. They love shade and moisture—these supplied they fully repay the care bestowed upon them. Our stand of plants exhibits fifteen Fuchsias of different colors and forms, all in the fullest bloom. In May, dark peaty soil was obtained from the woods. A plentiful supply of sand was stirred in, and all the plants were repotted. A teaspoonful of "fertilizer" was stirred around them, and their growth is wonderful, glorious! It is not too late to apply the same compost, even now, if your plants do not flourish.

Plants must never be watered when the sun shines hot upon them—it scorches them as badly as the frost of autumn. Always water after sunset, and be sure to give the soil a thorough drenching. If only the surface is wet the roots will not strike down deeply and give the plant a vigorous habit. Sprinkle the foliage with the fine nose of the watering pot, but pull it off to water the roots.

Asters and Zinnias, Stocks, &c., grow much finer if the ground is mulched with manure at this season. Train up each plant to sticks; pull up all the single ones, excepting a few of the Stocks, as the double varieties of that flower do not seed. Keep down the weeds—do not let them steal the strength from your garden—pull up a few every morning. In doing so they are kept under. Don't cultivate so large a garden that you cannot keep it neatly. It was a saying of the Carthagenians that "the land should be weaker than the husbandman, since of necessity he must wrestle with it, and if the ground prevailed, the owner must be crushed by it." All of us know of gardens which get the upper hand of their owners; but don't let them become our masters. Weed, stake, train, and prune daily, remembering that neatness is as requisite in flower beds as in our houses. None of our readers are too poor to have a garden—it need not be a large one—the smallest circle cut in the turf will be greatly prized by its owner; indeed, it may be treasured all the more for its diminutiveness, and surely it will receive much more attention!

If insects infect your roses and other plants, prepare a mixture of ten gallons of warmish water, one pint of soft soap, and half a pint of salt. Syringe the roses once a week; if badly infested, twice a week will not hurt them, and after a few applications you will find your plants free from vermin. This is a good remedy for the cabbage worm, but make the mixture twice as strong, and water freely.

S. O. J.

DOMESTIC RECEIPTS.

FAMILY YEAST.—A subscriber asks for an approved receipt for making potato yeast. We have applied to one of our lady correspondents in whom we can rely for good receipts, but, not having yet received an answer, we give the following which we find in the *Country Gentleman*:—

The following is the most *superior* receipt for yeast that I ever saw, and I have tried dozens, for we always use "hop rising." It is especially available to country people, as it requires no yeast to commence with. Try it, and you will *never* use any other. Boil two ounces of best hops in four quarts of water, half an hour; then strain it and let it cool to milk warm; then add a small handful of salt and half a pound of brown sugar; beat one pound of flour with some of the liquor, and mix all together. The third day add three pounds of potatoes boiled and mashed, and let it stand until the next day; then strain it and it is ready for use; stir it frequently and keep by the fire while making, and stir well just before using. This is very strong, and only half of the usual quantity is required.

FOR MOTHS.—The following simple precaution against moths is represented to be quite as sure as any of the popular antidotes:—

Safety from moths for furs consists in having them undisturbed through summer in a snug place. Muff boxes are not secure. Taking them out occasionally to air exposes them to the moth. No pepper, camphor or tobacco is needed; after you have worn them for the last time in spring put them into a linen pillow case, tie up the end in a tight knot, and shut them up in a drawer which will not be often opened. A true and tried prescription.